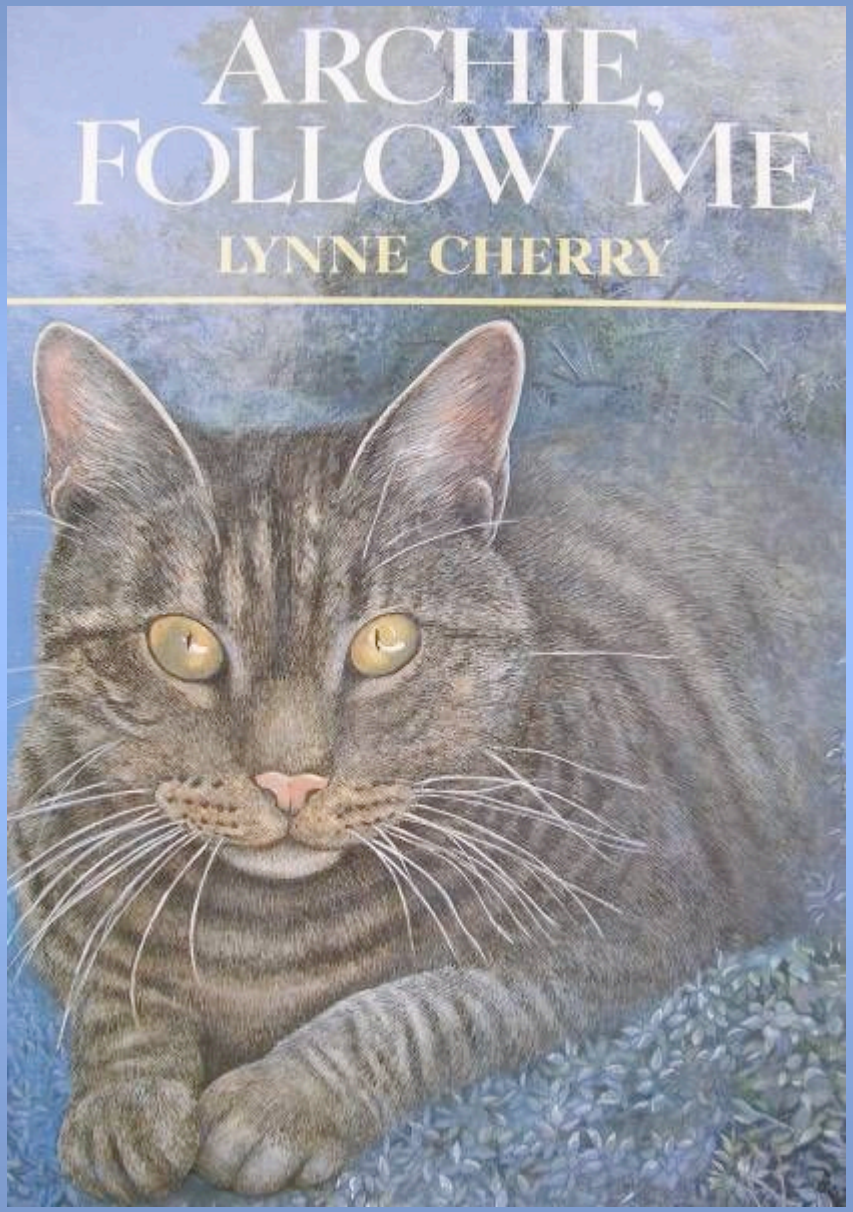
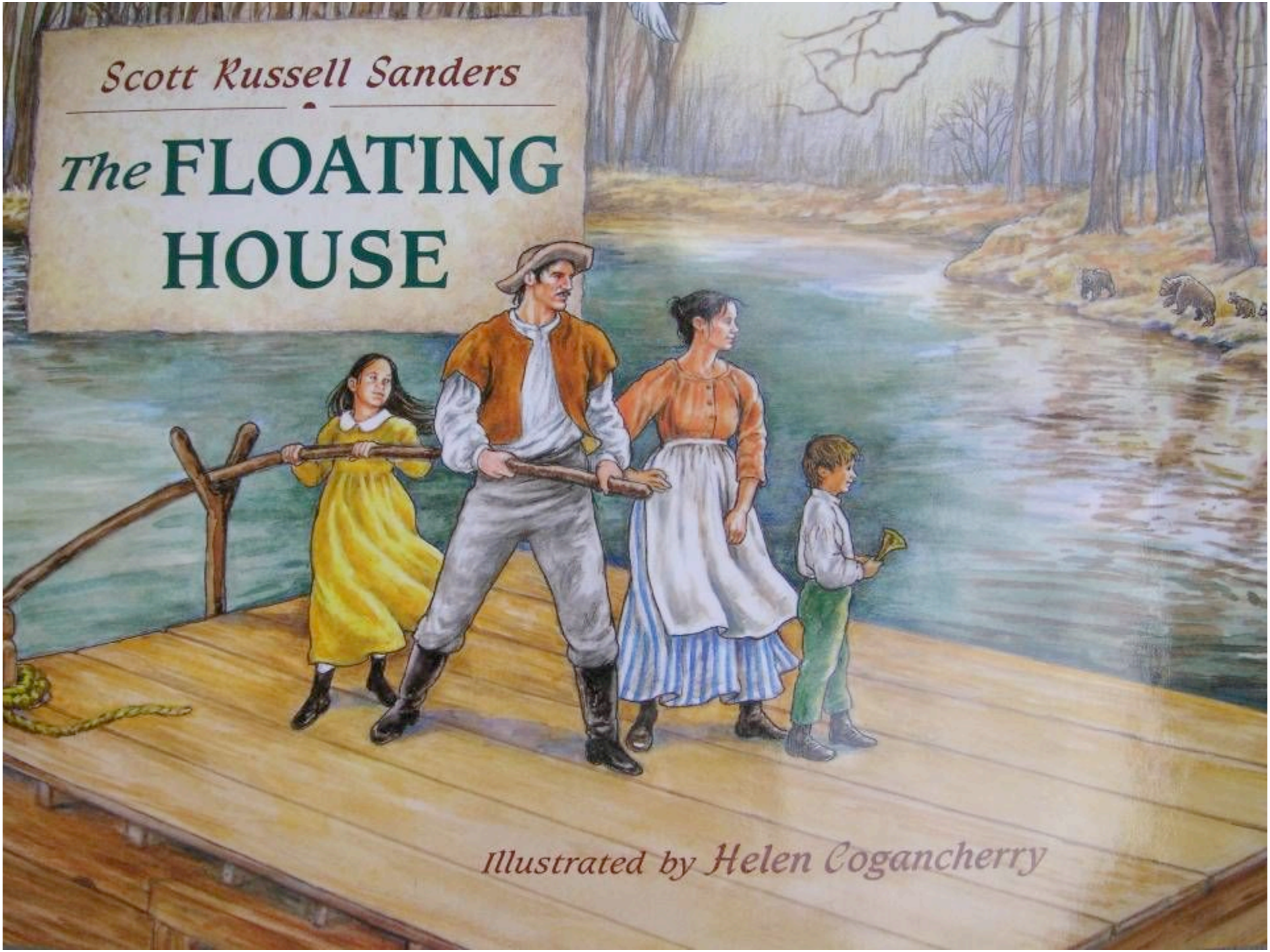
Conservation & Inspiration

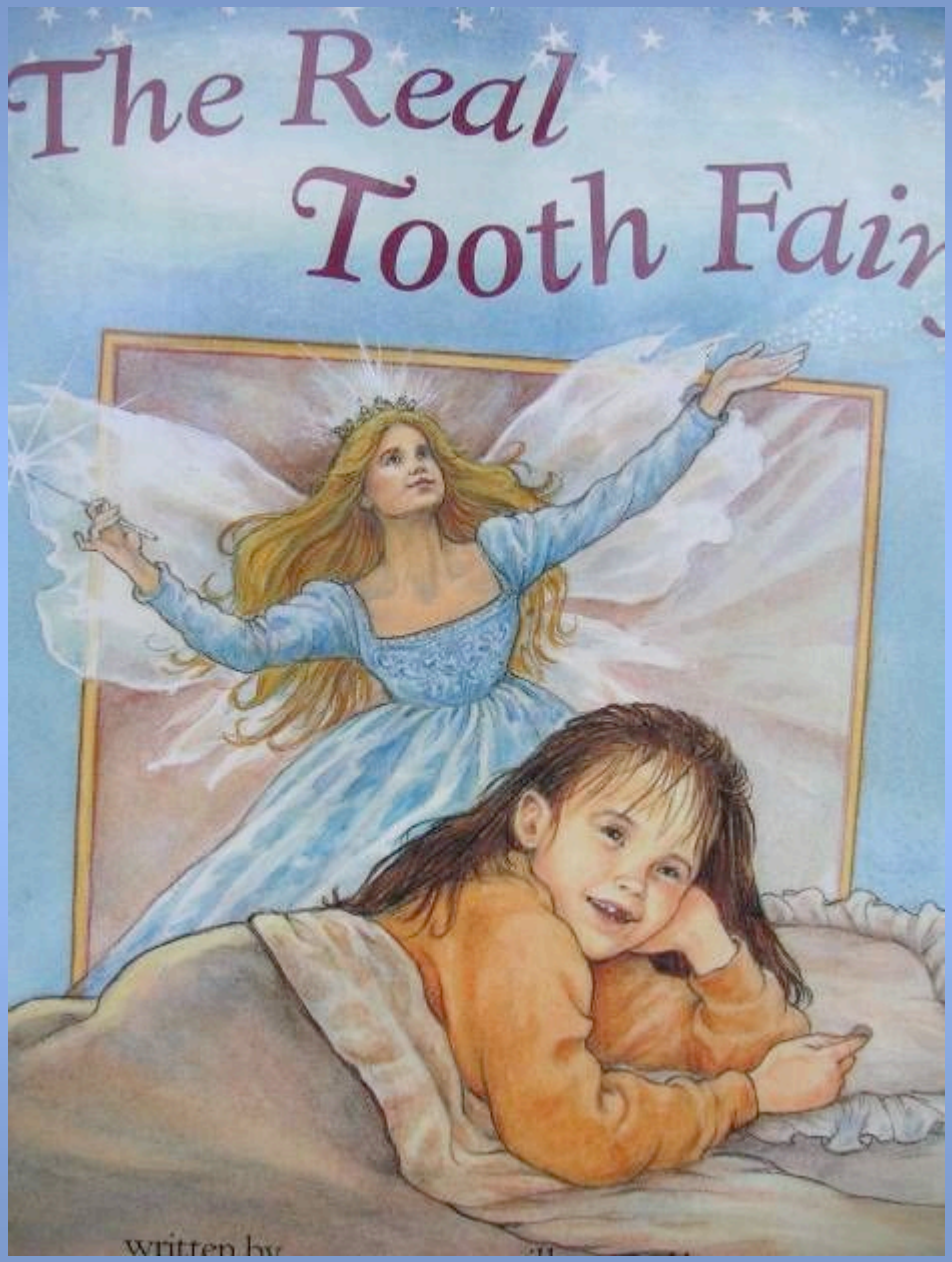
Teaching Conservation Through Children's Literature

KITTY'S ADVENTURES

By Lynne Cherry

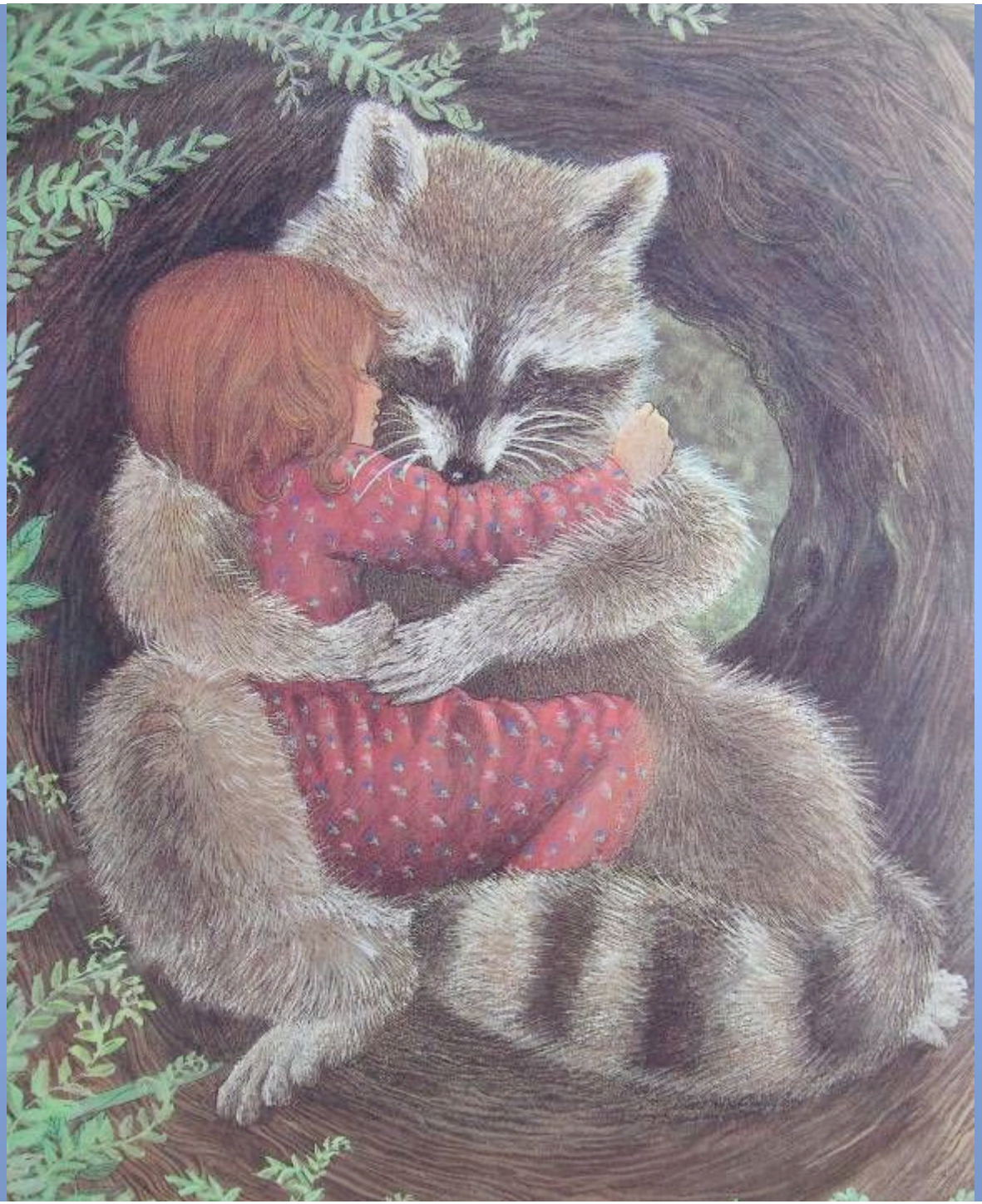

ARCHIE,
FOLLOW ME
LYNNE CHERRY

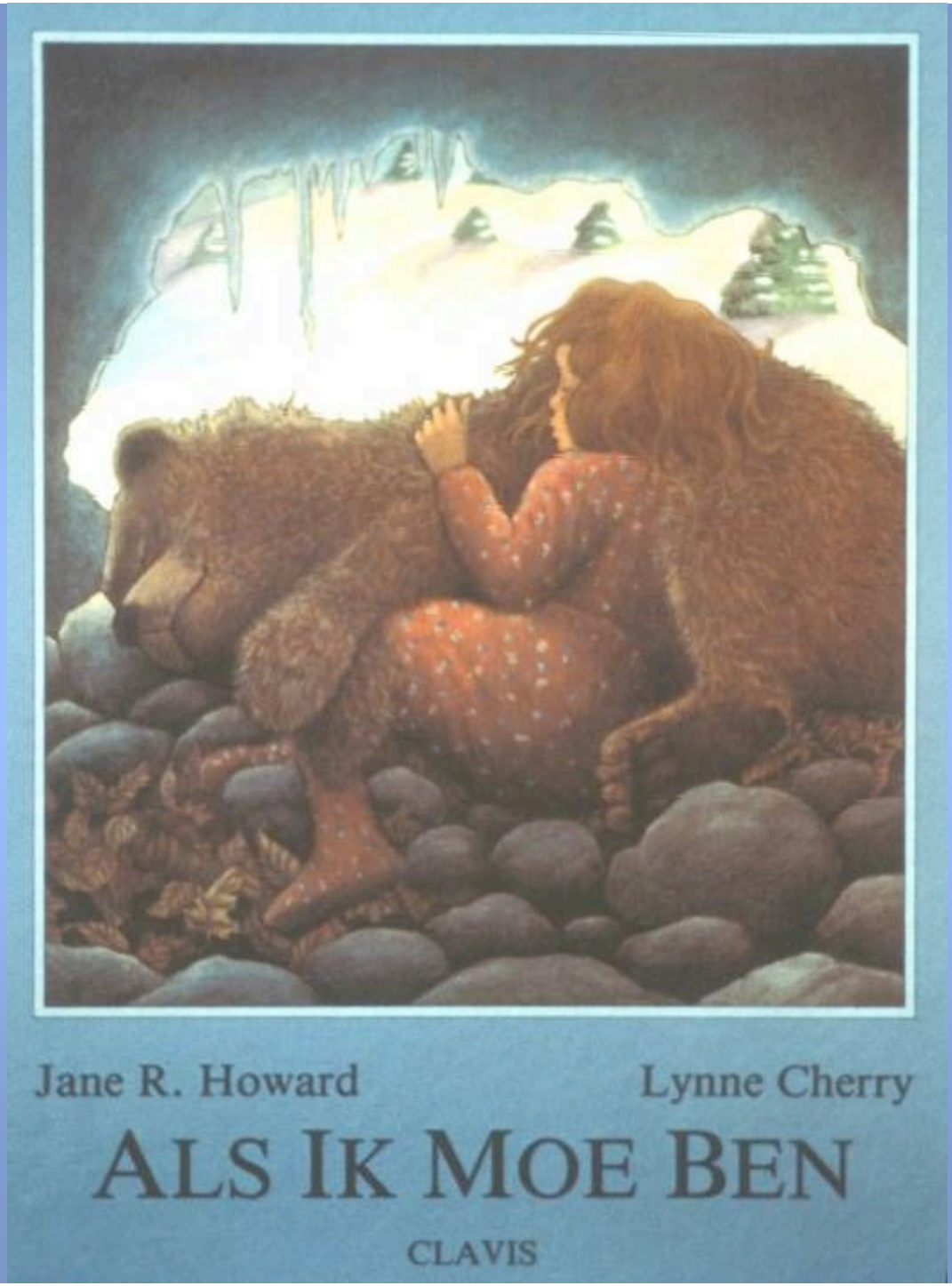

Scott Russell Sanders
The FLOATING HOUSE
Illustrated by Helen Cogancherry


The Real
Tooth Fai
written by

and where she saw
them she started to meow.
Alex, who was an expert on
traps, finally freed Kitty.

Poor Kitty! Lupine
and Hers mother took Kitty to
the vet
a week later the vet
told Lupine's mother that




Jane R. Howard
Lynne Cherry
ALS IK MOE BEN
CLAVIS

Habitat, habitat, gotta have a habitat

Welcome to Tuckahoe's Wildlife Habitat

This schoolyard habitat is certified by the National Wildlife Federation because it provides the 4 basic elements that wildlife need to survive.

SHELTER
WATER
FOOD
ROOM TO RAISE YOUNG

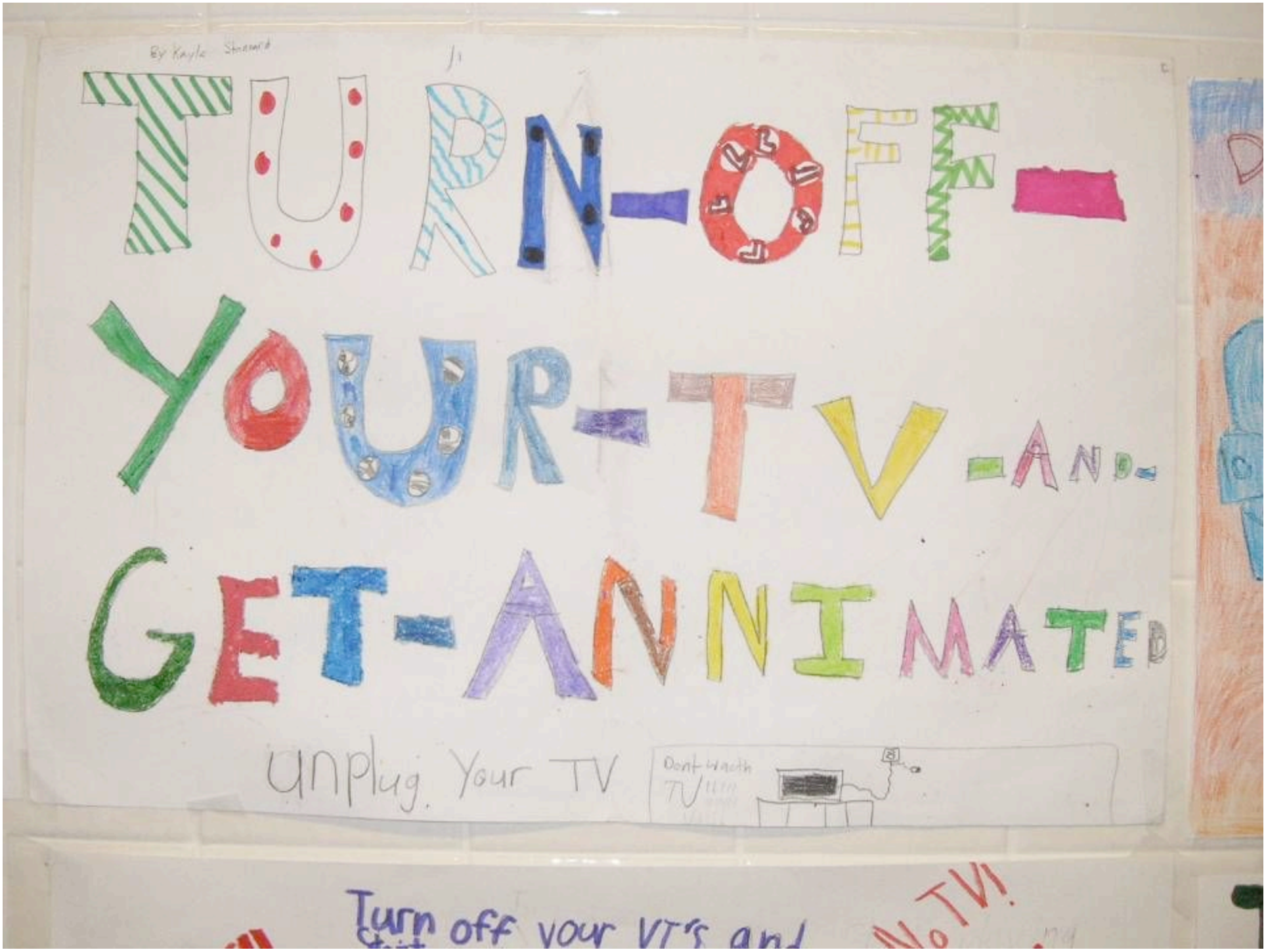
Can you find each of these in this habitat?
Can you find them in Tuckahoe Park?

Tuckahoe Park Nature Trail

Thanks to the hard work and cooperation of Tuckahoe School, the Arlington East Falls Church Civic Association, Arlington Parks and the Neighborhood Conservation Fund, Tuckahoe Park is being revitalized!

An erosion control plan and interpretive nature trail were completed in spring 2003. The nature trail stops were designed by the staff and students of Tuckahoe. Each stop highlights a natural resource or interesting fact about this urban forest ecosystem.

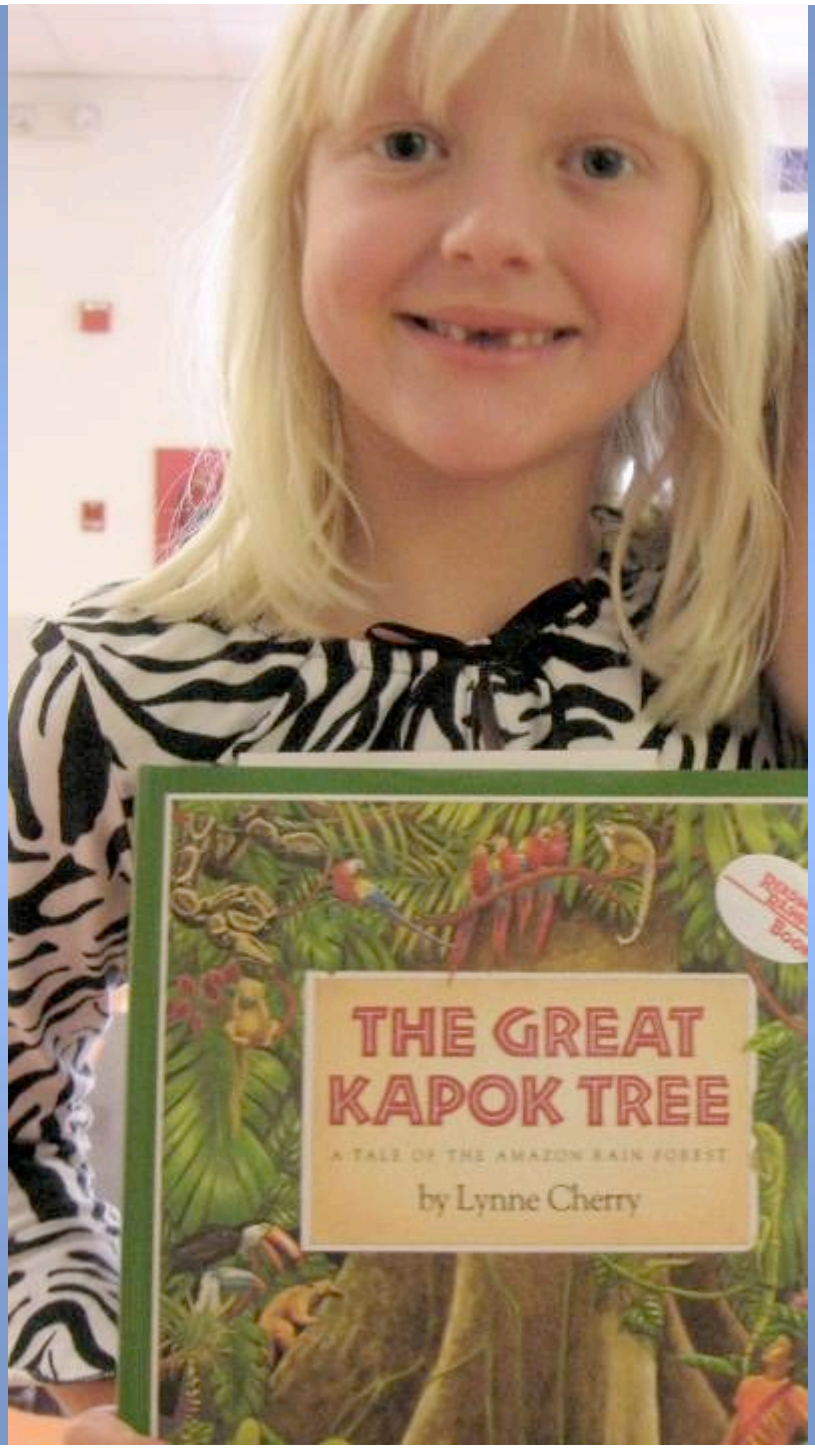

No Mow Zone
Third grade students requested that Arlington County stop mowing this area to allow the plants to grow naturally.
What differences do you notice between the mowed area and the no-mow zone? Which area do you think is a healthier habitat for insects, birds and small animals?


By Kayla Shamb
TURN-OFF-
YOUR-TV-AND-
GET-ANNIMATED
unplug Your TV
Turn off your TV's and
No TV!


Turn off your T.V. week.
Do these instead...
Drive Remote control
Ride bike
Climb trees
play card games
Color
play
with
dog
play
baseball
paint


EAD!
about the environment
2m
Harris Teeter

What you
know and
love,
you will care
for


THE GREAT
KAPOK TREE
A TALE OF THE AMAZON RAIN FOREST
by Lynne Cherry

MADISON

Blaze destroys home, garage in Oswego County B

Syracuse man shot in head during robbery B

SIXTH-GRADERS Tristan Jones and Jennifer Metz count pennies at Edward R. Andrews Elementary School last week. Pupils at Andrews Elementary have been collecting money this year to protect land in the Amazon rain forest.

Pennies for Protection

Andrews pupils collect money to buy rain forest land

By Sapna Kollali
Staff writer

Morrisville-Eaton second-grader Cameron Lake's favorite animal is the leopard. He has seen them only in zoos, but he has been studying the rain forest in school since kindergarten and knows that the leopard's habitat is in danger.

He's among more than 400 pupils at Edward R. Andrews Elementary School who have been collecting money this year to protect land in the Amazon rain forest, where scientists estimate 10 percent to 20 percent has been destroyed by deforestation.

"I care about animals and saving their home," Lake said. "If we buy the land, people won't cut down trees and we can help the Earth."

For the 13th year, Andrews Elementary teacher Joyce Nevison is leading the school in a quest to save the world's rain forests, through a national program called the Big Gift to the Earth, run by the New Mexico-based Earth's Birthday Project. Since 1992, the school has purchased more than 70 acres in seven Central and South American countries, Nevison said.

Each year since 1990, Earth's Birthday chooses a different section of rain forest, and participating schools raise money to purchase acreage in that region, said Kit Brewer, the project's director of educational programs.

This year, the project is run jointly with the World Wildlife Fund, which will take state-owned land in the Brazilian rain forest and move it permanently into protective parks and reserves, Brewer said. An acre costs $5 in the Amazon through this program.

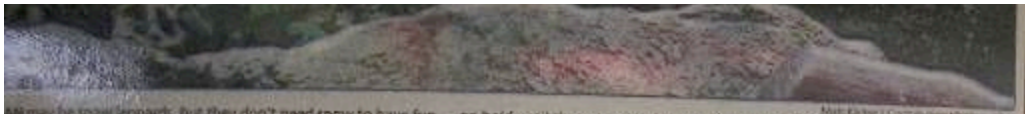
"It's not a lot of money," Brewer said, "and it's something that a class can actually do."

Morrisville-Eaton fourth-grader Hayley Brown said her sister, Rae, and two friends, now all in seventh grade, sold purses, bracelets and bead animals last year and made enough money to buy an acre in Paraguay on their own.

"I helped them a little, because I want to save the animals," Brown said. "It's pretty cool that our school owns land."

In addition to Andrews Elementary, several other Central New York schools have participated in the Earth's Birthday Project, including East Syracuse-Minoa, Fayetteville-Manlius, Phoenix, Syracuse, Liverpool, Baldwinsville, Mexico, Sandy

PUPILS, PAGE B-2



...NN may be snow leopards, but they don't need snow to have fun. ...ick made their public debut in Friday's mild temperatures at the ...oo. The two females, born at the zoo May 4, are part of a pairing ...captivity breeding of the endangered species. Their debut was on hold until they were too large to squeeze through the wire mesh fence around their Wild North habitat. The zoo's family of four is among a group of about 300 snow leopards in captivity in North America. Only about 4,000 of them remain in their natural habitat, the Himalayan Mountains of Central Asia.

Morrisville-Eaton Elementary School
Students
for adopting and protecting 1 *acre(s) in*
Mata Atlantica, Brazil

The land signified above will be managed by Fundação de Pesquisa Envida Selvagem (SPVS)

The Nature Conservancy
Saving the Last Great Places

© Michael Sommerlad

Earth's Birthday Project

20172 The Nature Conservancy • Worldwide Office • Adopt an Acre® • 4245 North Fairfax Drive • Arlington, Virginia 22203-1606

Adoption Certificate

the bearer of this document is an

Official Adoptive Parent

of

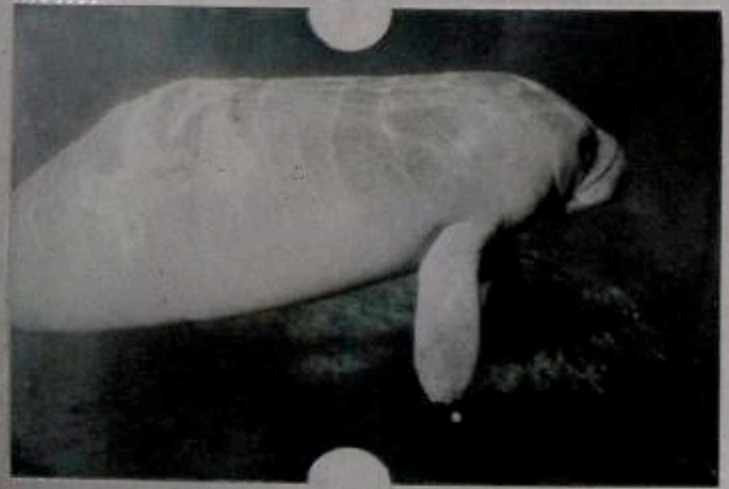
Success

an endangered

West Indian Manatee

at

Blue Spring State Park



Save the Manatee Club

THE NATURE CONSERVANCY

GRATEFULLY RECOGNIZES

Edward R. Andrews Elementary School

FOR ADOPTING AND PROTECTING *5.0* ACRE(S) OF RAINFOREST AT
THE DARIEN BIOSPHERE RESERVE,
PANAMA

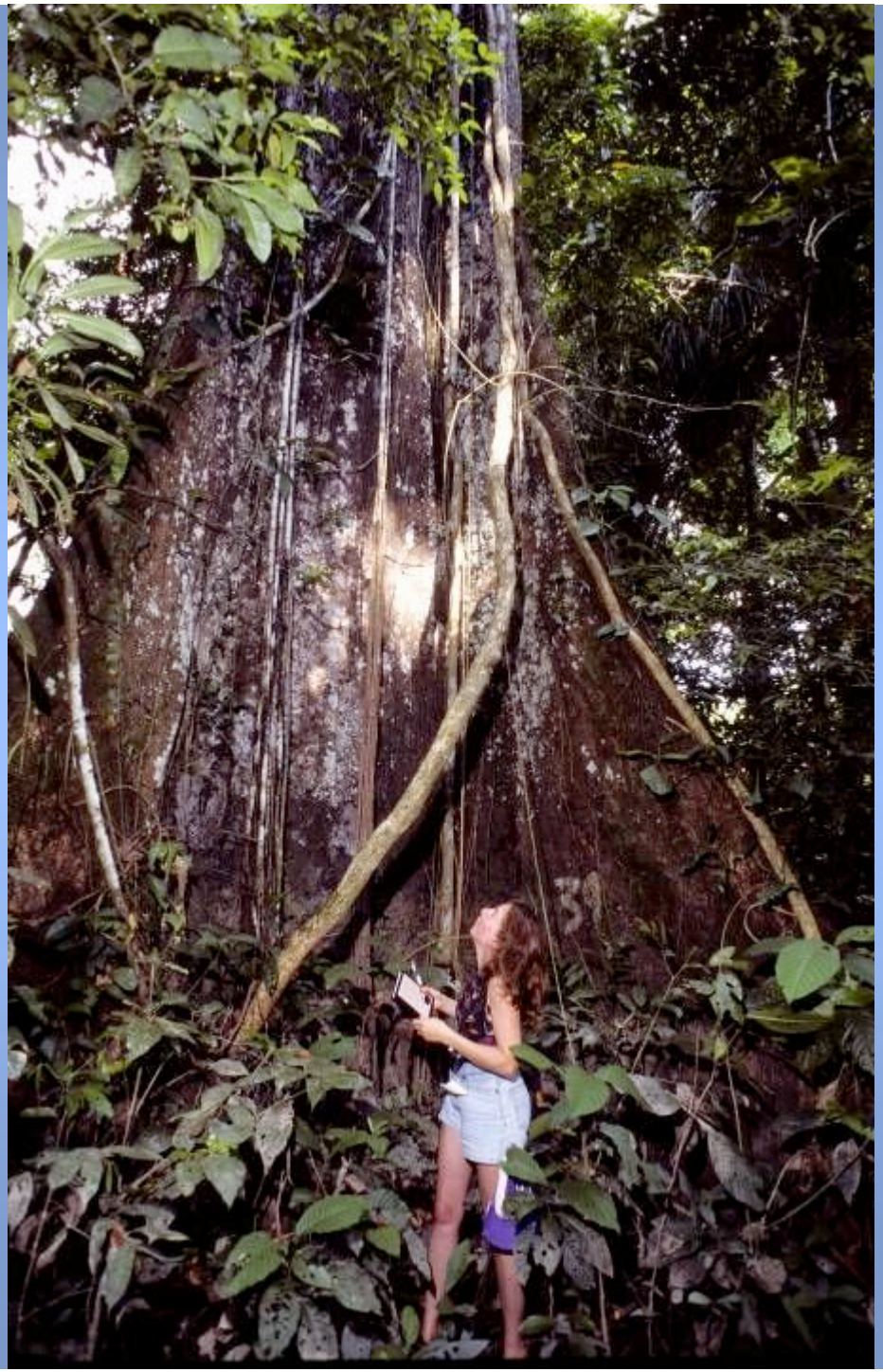
THE LAND SIGNIFIED ABOVE WILL BE MANAGED BY
ASOCIACION NACIONAL PARA LA CONSERVACION DE LA NATURALEZA

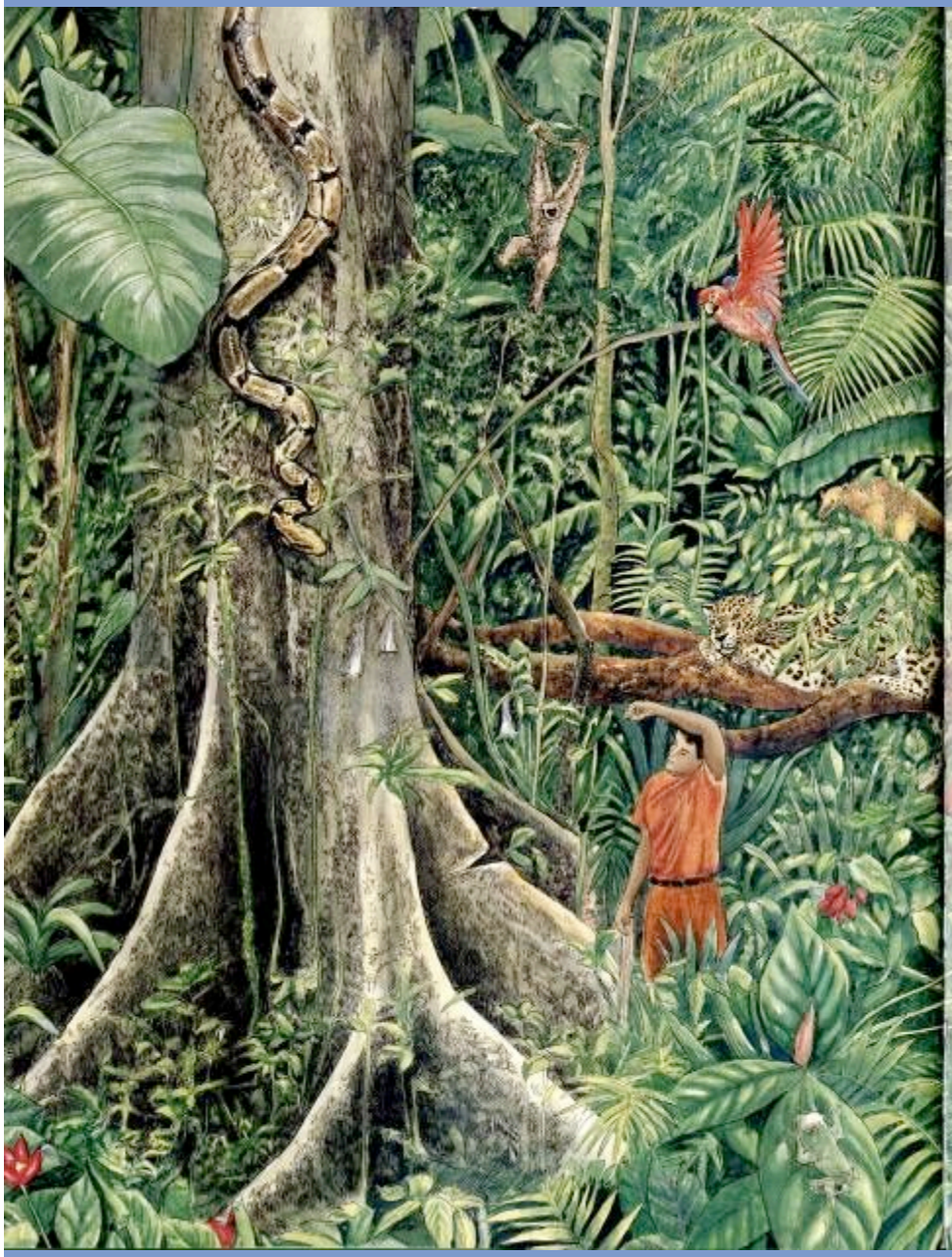
Rain Forest Conservation

- Monteverde Conservation League
- Children have saved over 40,000 acres of Rain forest in Monteverde, Costa Rica

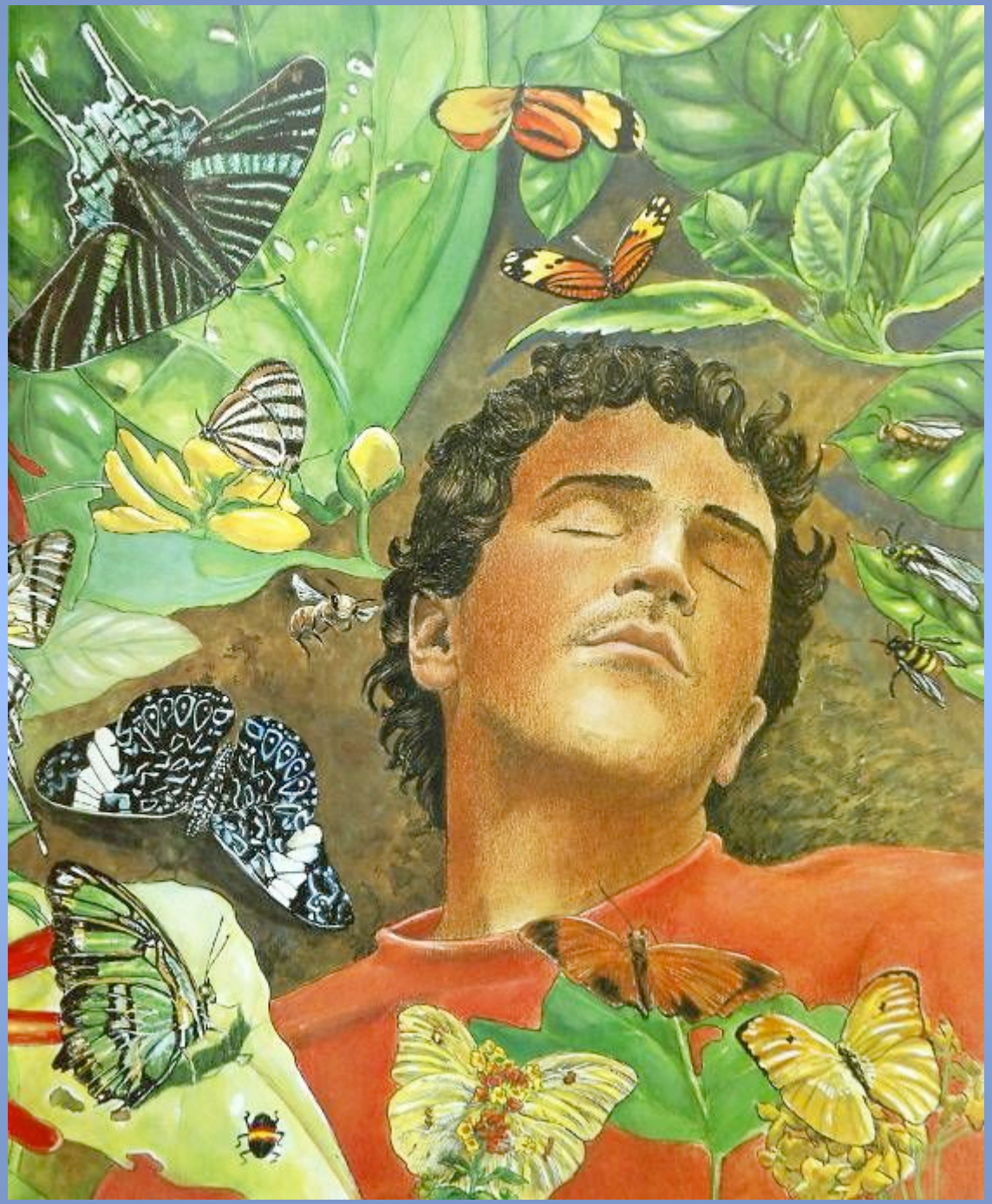
- Thousands of Children have put on performances of *The Great Kapok Tree* to educate the public about rain forest deforestation.

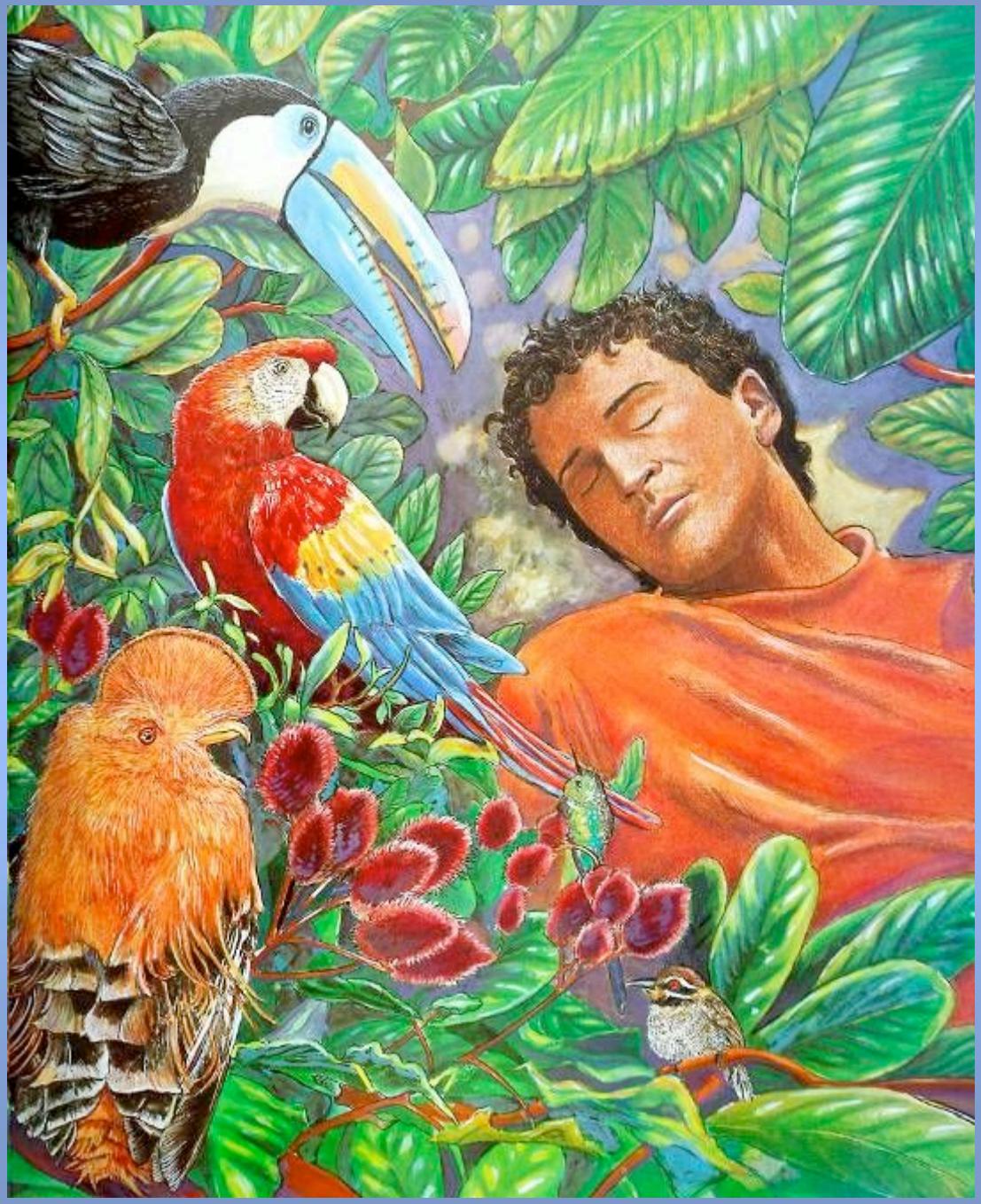

HUDSON BAY
NORTH
ATLANTIC
OCEAN
CARIBBEAN SEA
TROPIC OF CAPRICORN
PACIFIC OCEAN
SOUTH
ATLANTIC
OCEAN
SCOTIA SEA
DRAKE PASSAGE

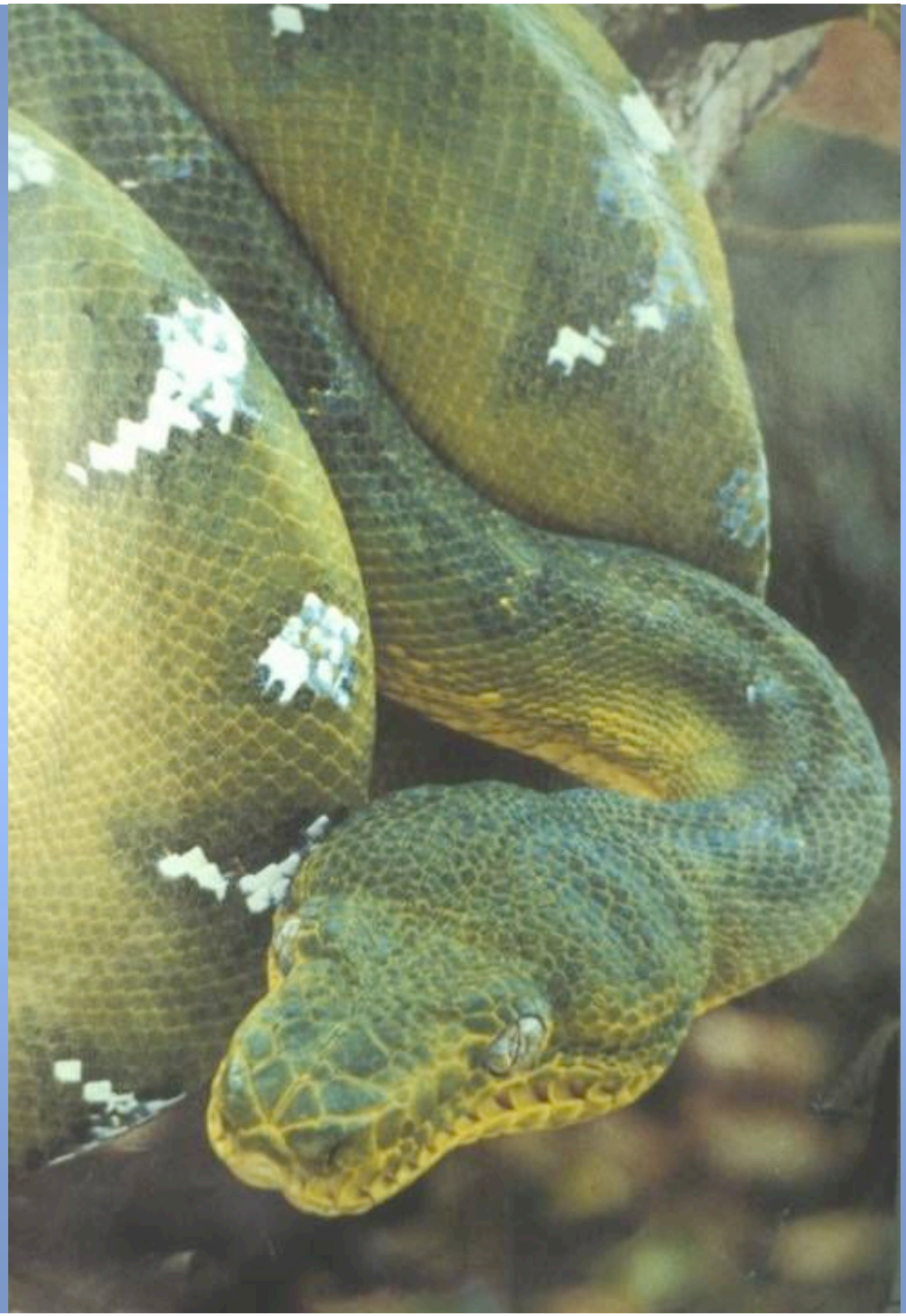




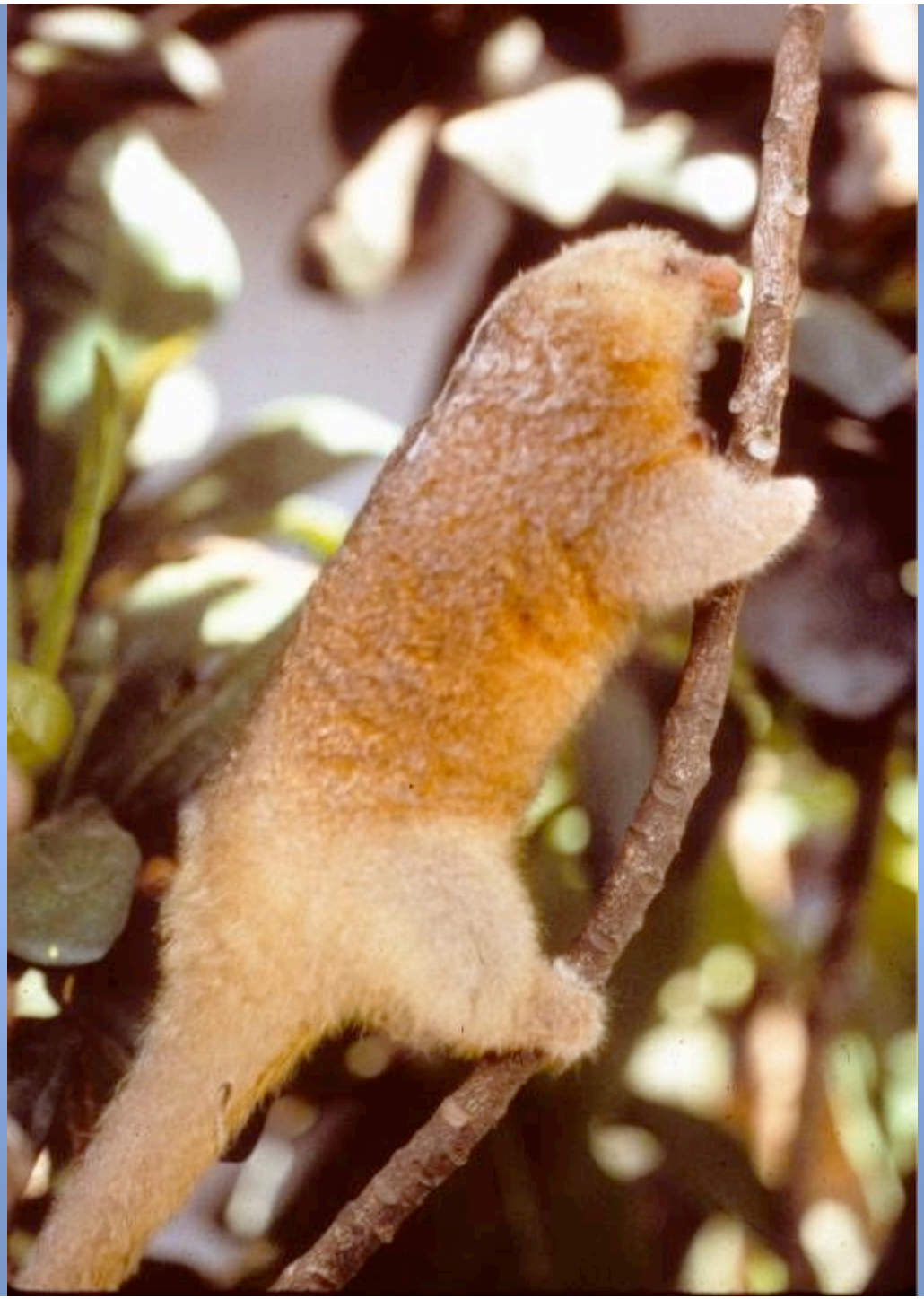
残された男は斧をふりあげて、大木を切りはじめました。カーン、カーン、カーン。その音は森のおくまでひびきました。熱帯雨林の木はとてもかたいのです。カッ、カッ、カッ。男は汗びっしょりになって斧をふりおろしていましたが、つかれて木の根元に腰をおろしました。森は男をつつみこみ、それから彼を深いねむりに引きこんでしまいました。

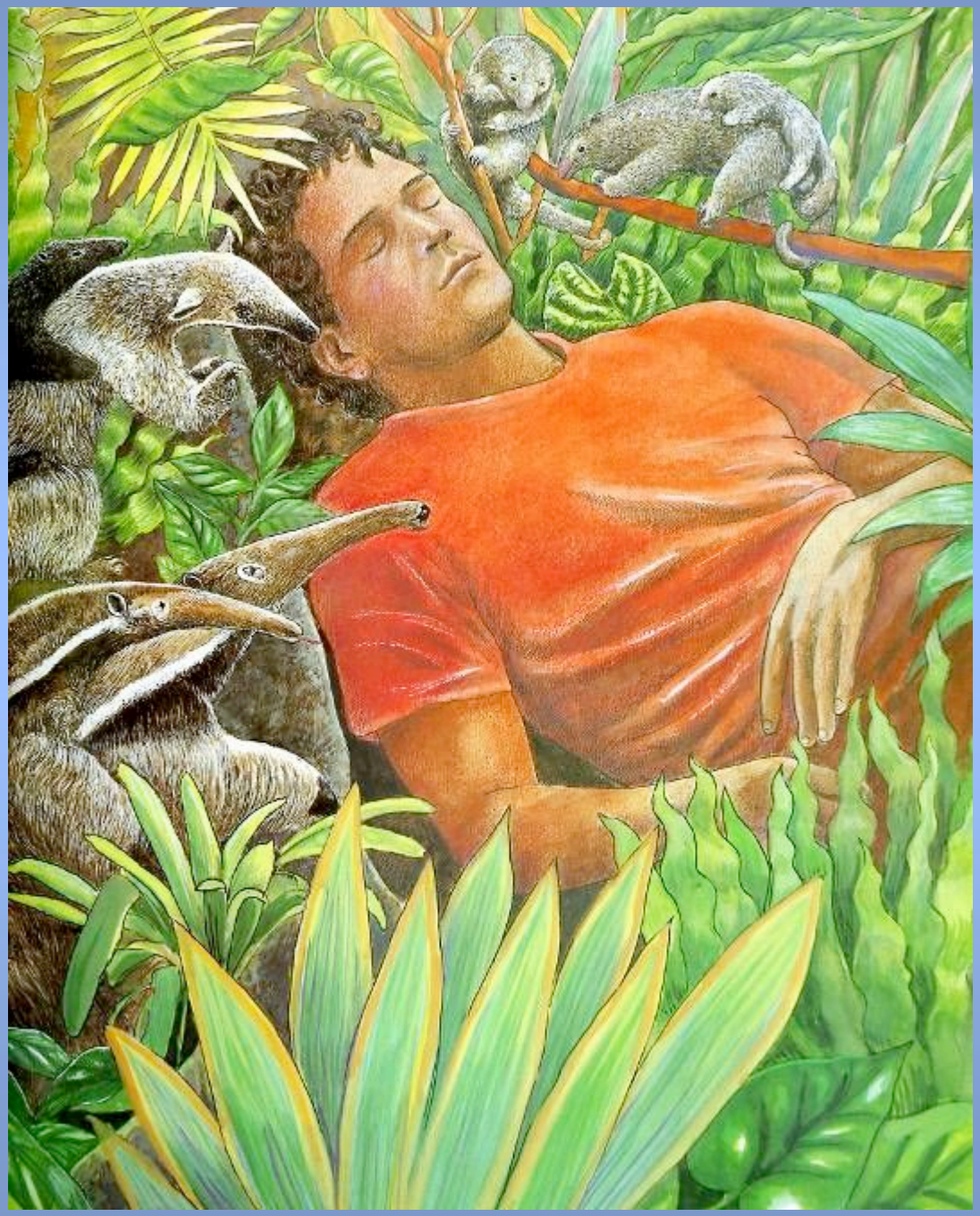


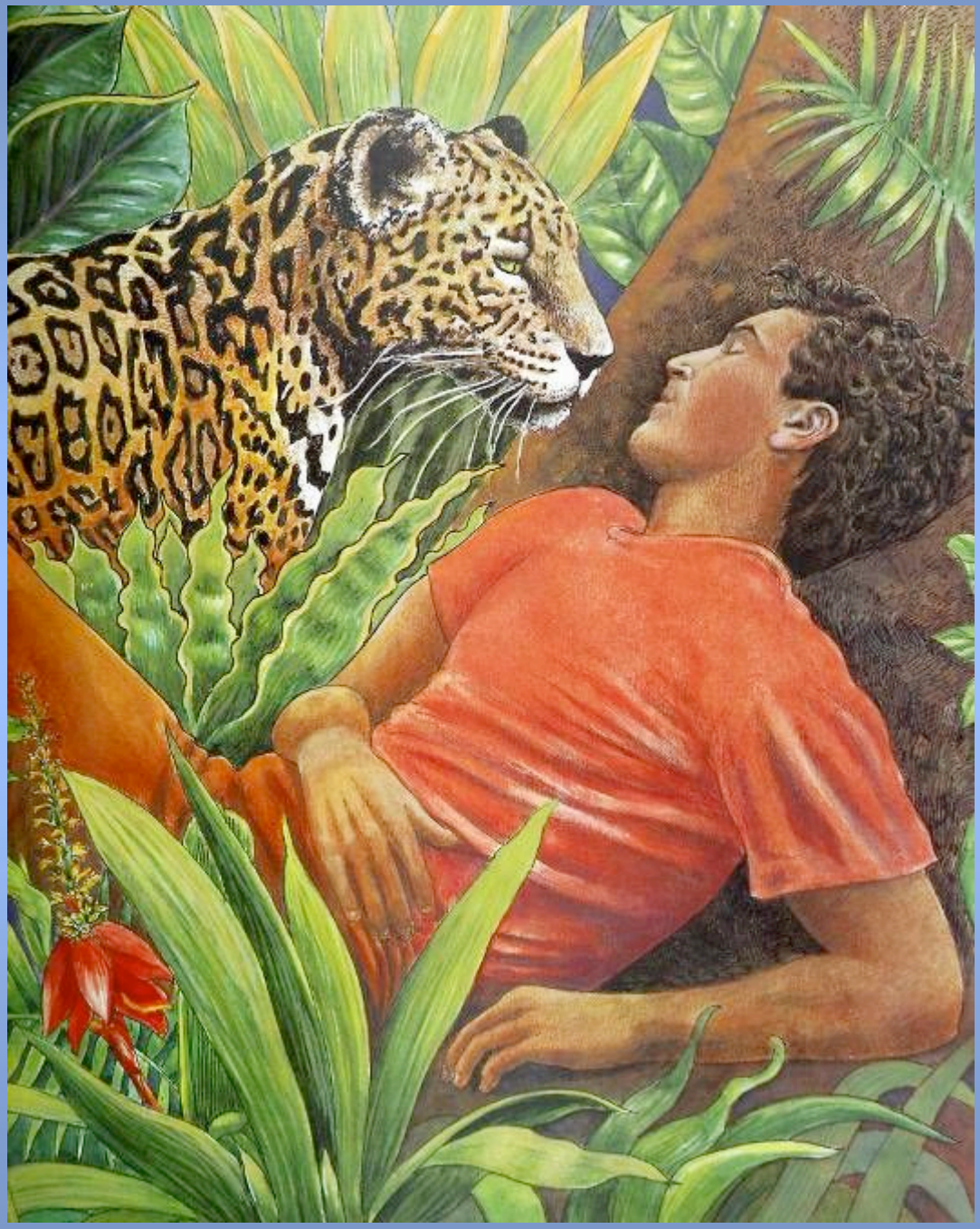


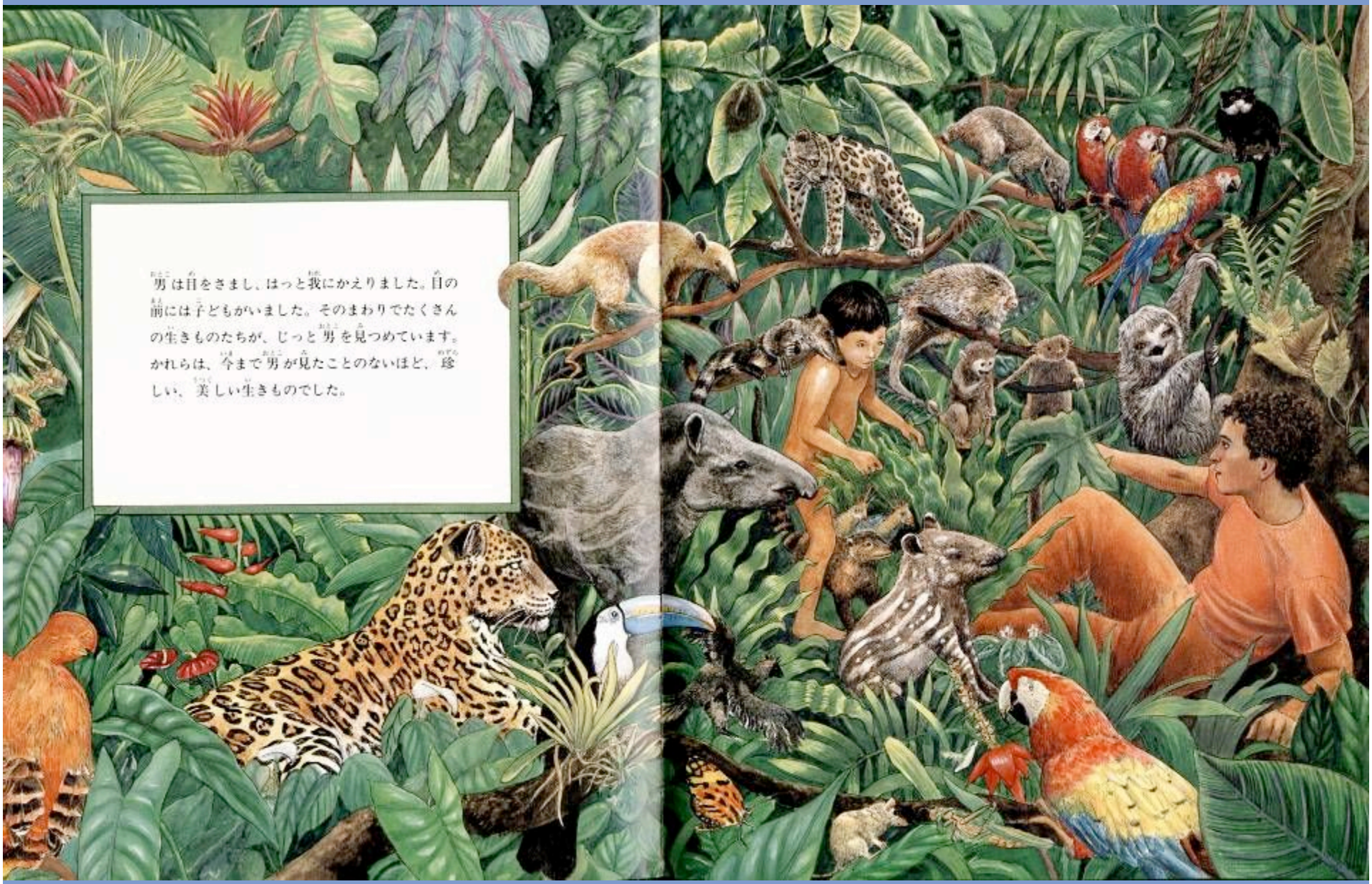


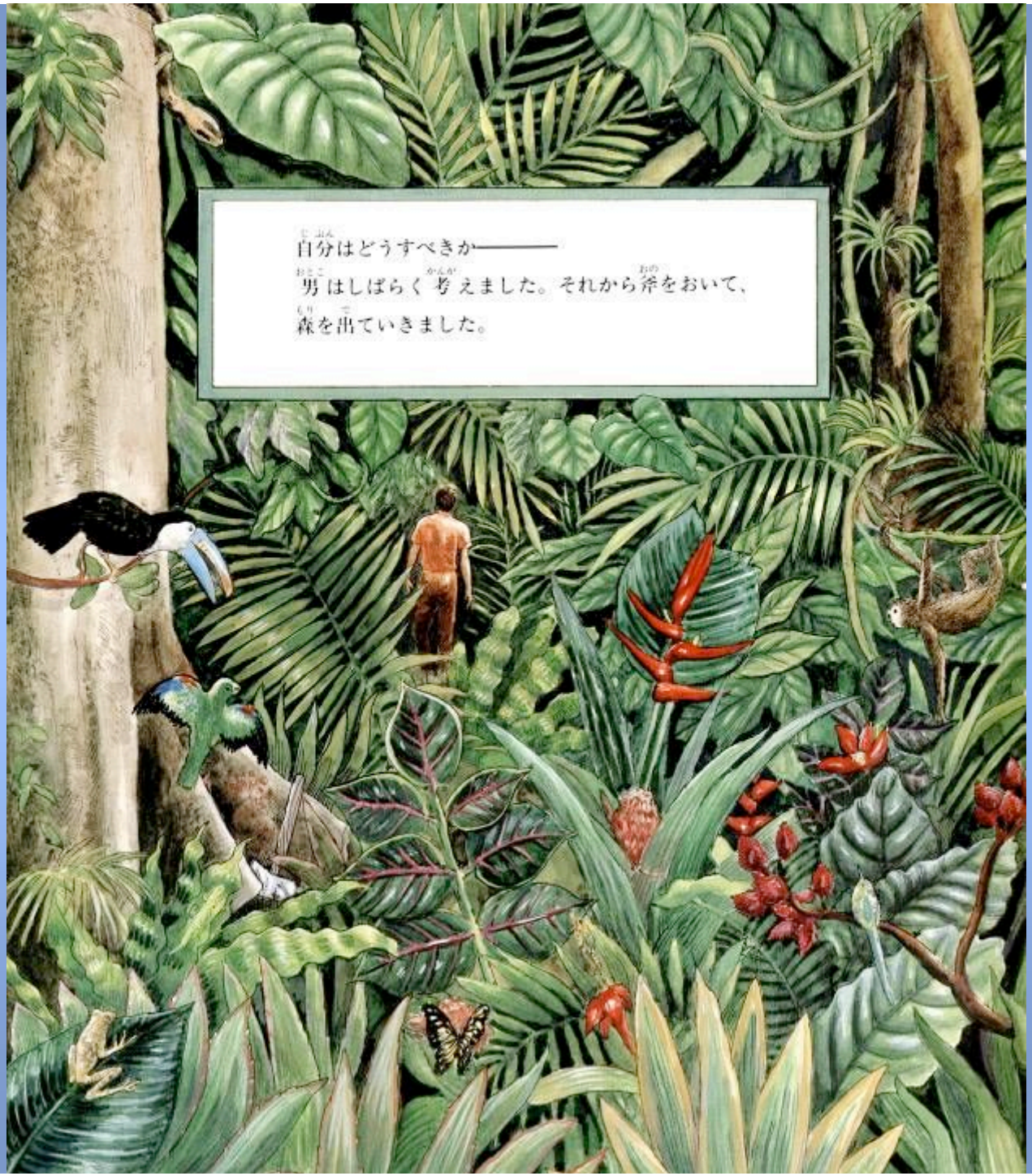

カポックの木には、大きな蛇が住んでいました。
蛇はするするとおりてきて、斧で傷ついた木をしらべました。それからねむっている男に近づいて、耳もとにはなしかけました。「そうやって、なにも知らずに切っているのだろうが、この木はわたしの家なのだよ。先祖代々みなこの木を住みかにしてきた。木を切られたらわたしはどこに住んだらよいのだろう？」








男は目をさまし、はっと我にかえりました。目の前には子どもがいました。そのまわりでたくさんの生きものたちが、じっと男を見つめています。かれらは、今まで男が見たことのないほど、珍しい、美しい生きものでした。


自分はどうすべきか――――
男はしばらく考えました。それから斧をおいて、
森を出ていきました。

Library of Congress Cataloging-in-Publication Data
Cherry, Lynne.
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p. cm.
"Gulliver Green."
Summary: Kanunya believes in the shaman's wisdom about the healing properties of plants found in the Amazon rain forest and hopes one day to be a healer for his people.
ISBN 0-15-201281-8
[1. Healers—Fiction. 2. Rain forests—Amazon River Region—Fiction. 3. Amazon River Region—Fiction.]
I. Cherry, Lynne. II. Plotkin, Mark J. III. Title.
PZ7.P7235Sh 1998
[E]—dc21 97-5978

First edition
F E D C B A
Printed in Mexico

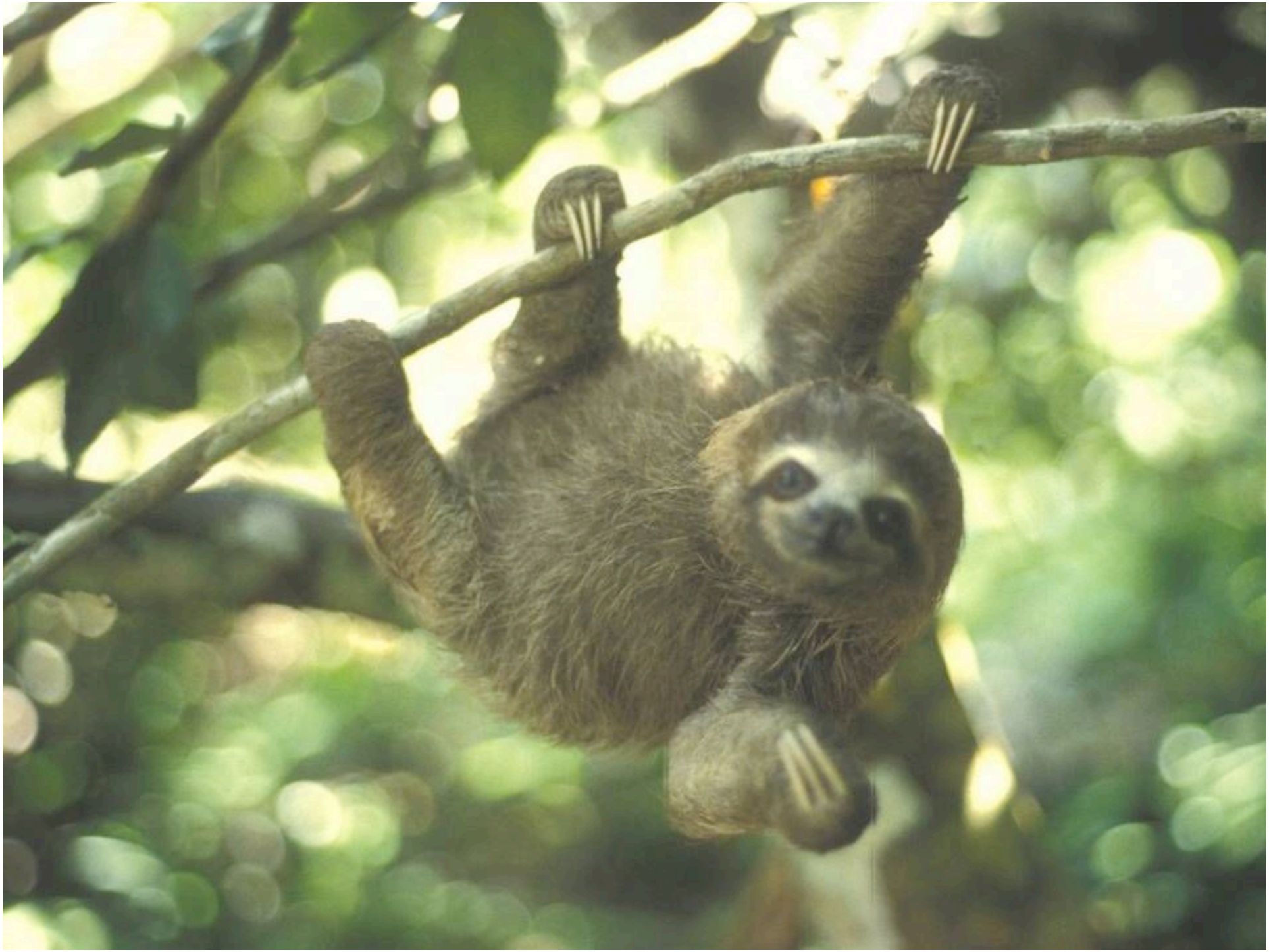
Gulliver Green® books focus on various aspects of ecology and the environment, and a portion of the proceeds from the sale of these books is donated to protect, preserve, and restore native forests.

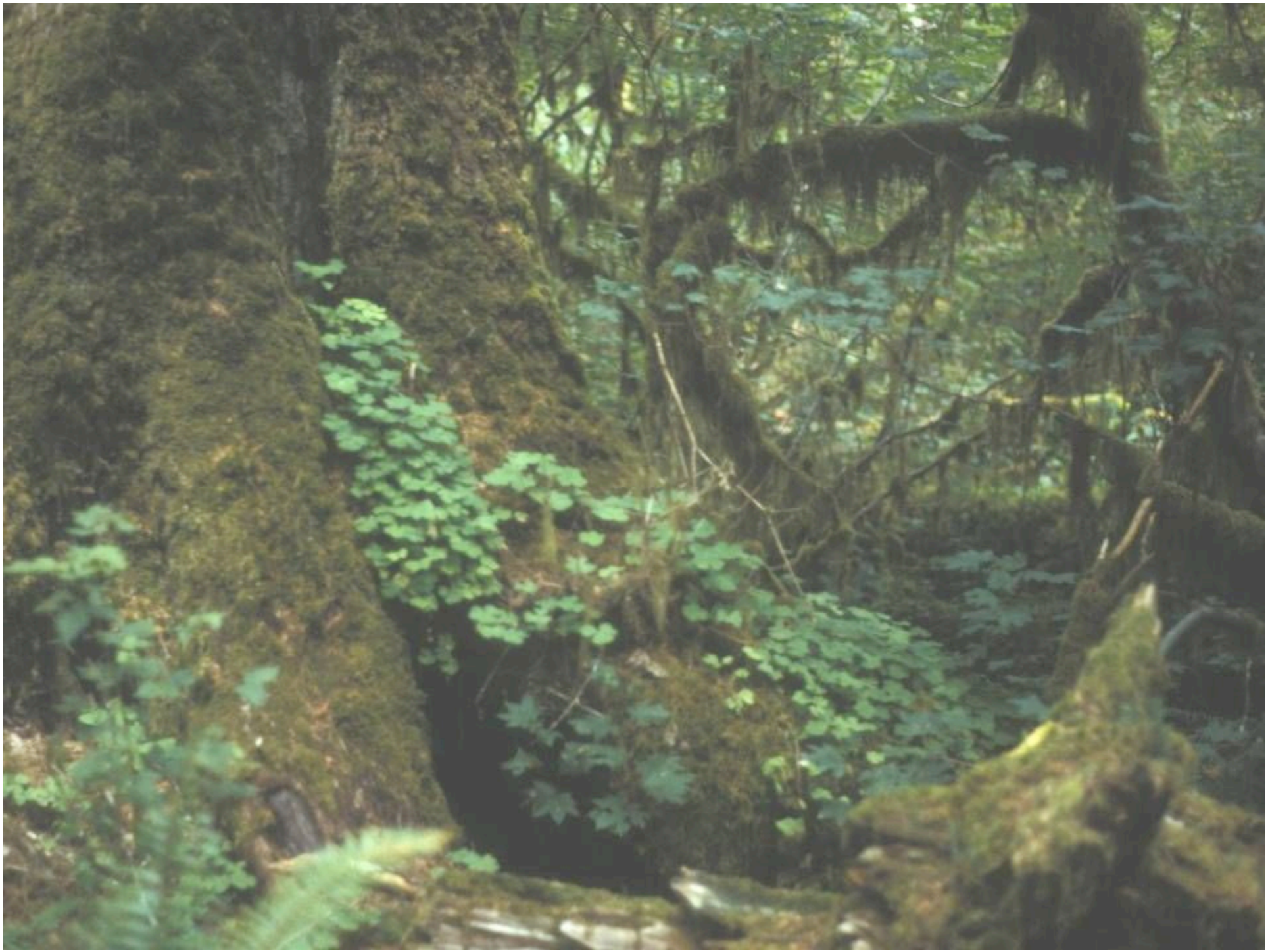
The paintings in this book were done in Pentel watercolors on Strathmore 400 watercolor paper.
The display type is a hand-altered version of Herculanum.
The text type was set in Columbus.
Color separations were made by Bright Arts, Ltd., Singapore.
Printed and bound by R.R. Donnelley & Sons Company, Reynosa, Mexico
This book was printed on totally chlorine-free Nymolla *Matte Art paper.*
Production supervision by Stanley Redfern and Ginger Boyer
Designed by Linda Lockowitz

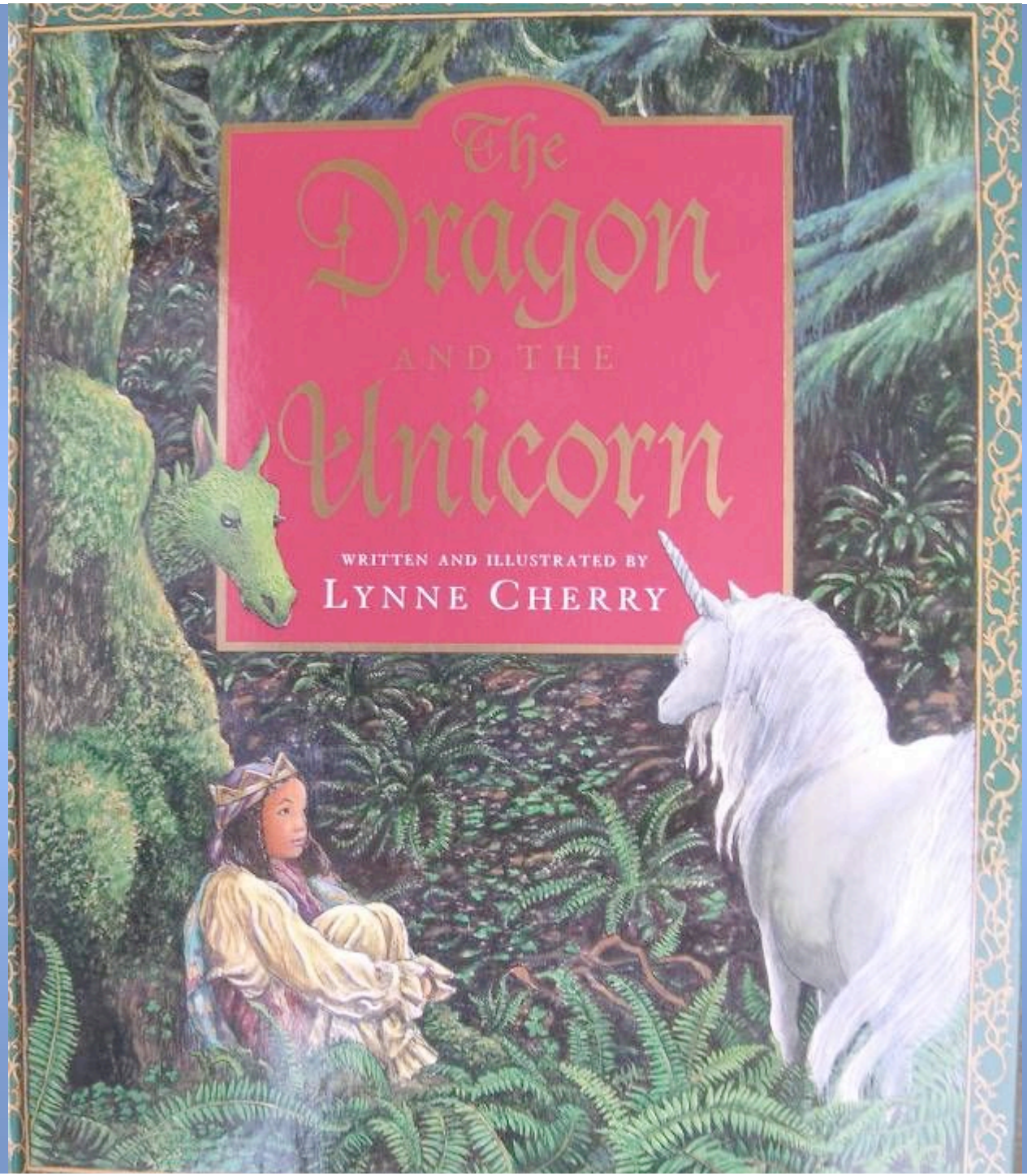
Our thanks to all the wonderful people of Kwamala and especially to the following: Isaac, who modeled for the shaman's apprentice as a child; Kanunya, who modeled for the shaman's apprentice as a grown man; Nahtahlah, the medicine man, who modeled for the shaman and who shared his wisdom of the rain forest with both Lynne and Mark; Koita, who modeled for the chief; Amazina, Talmelah, and the other people of Kwamala who modeled for the Tirio villagers; Liliana Madrigal, who posed as the ethnobotanist; R. E. Schultes; Judi and Henk Reichart, Chris Healy, Neville Gunther, Marga Werkhoven, Iwan Derfeld, and Gian Air for logistical support in Suriname; and to our beloved Frits Van Troon, who continues to serve as guide, teacher, mentor, and friend.

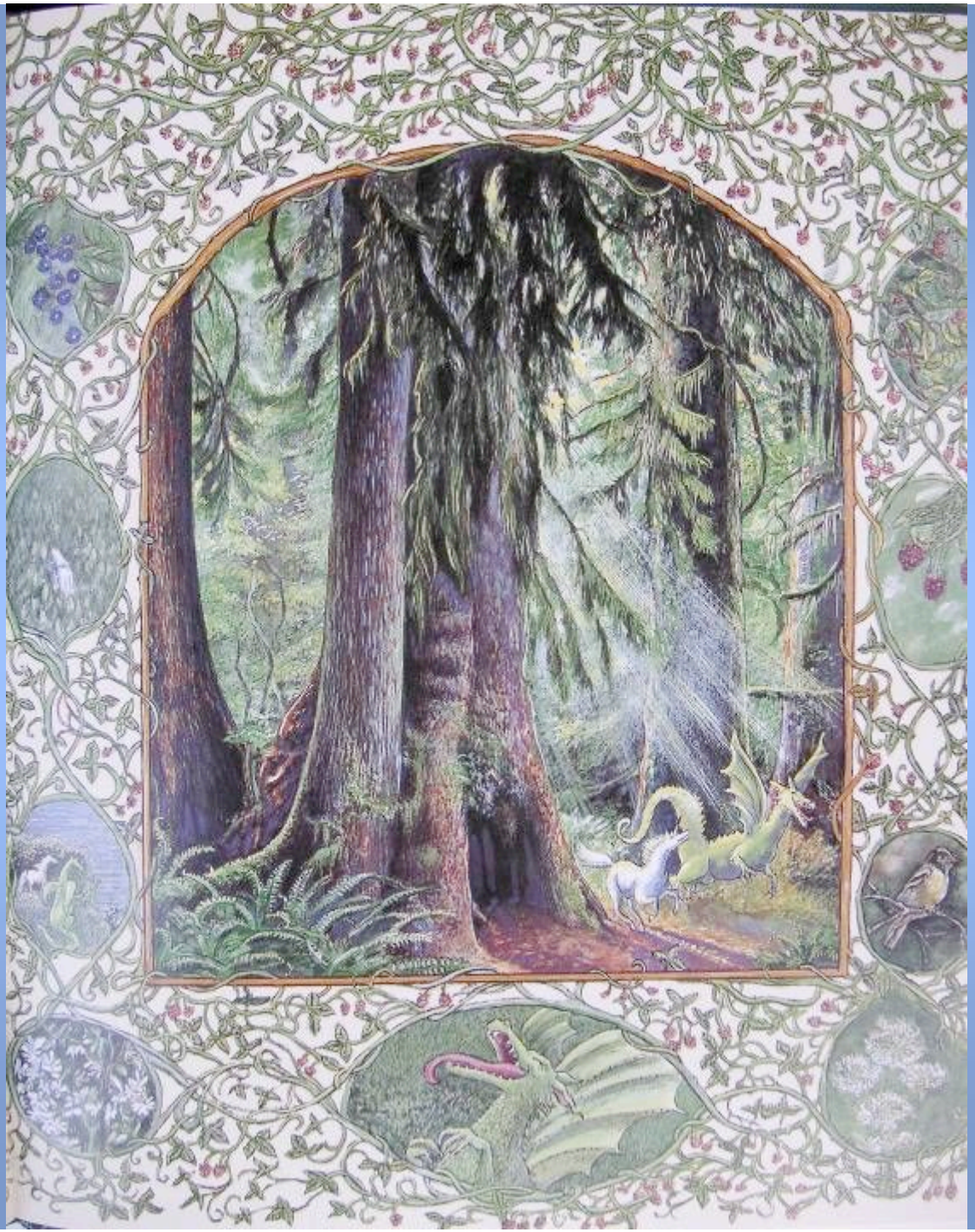
Lynne Cherry wishes to thank the Marine Biological Laboratory, Woods Hole, Massachusetts, for her artist-in-residency.

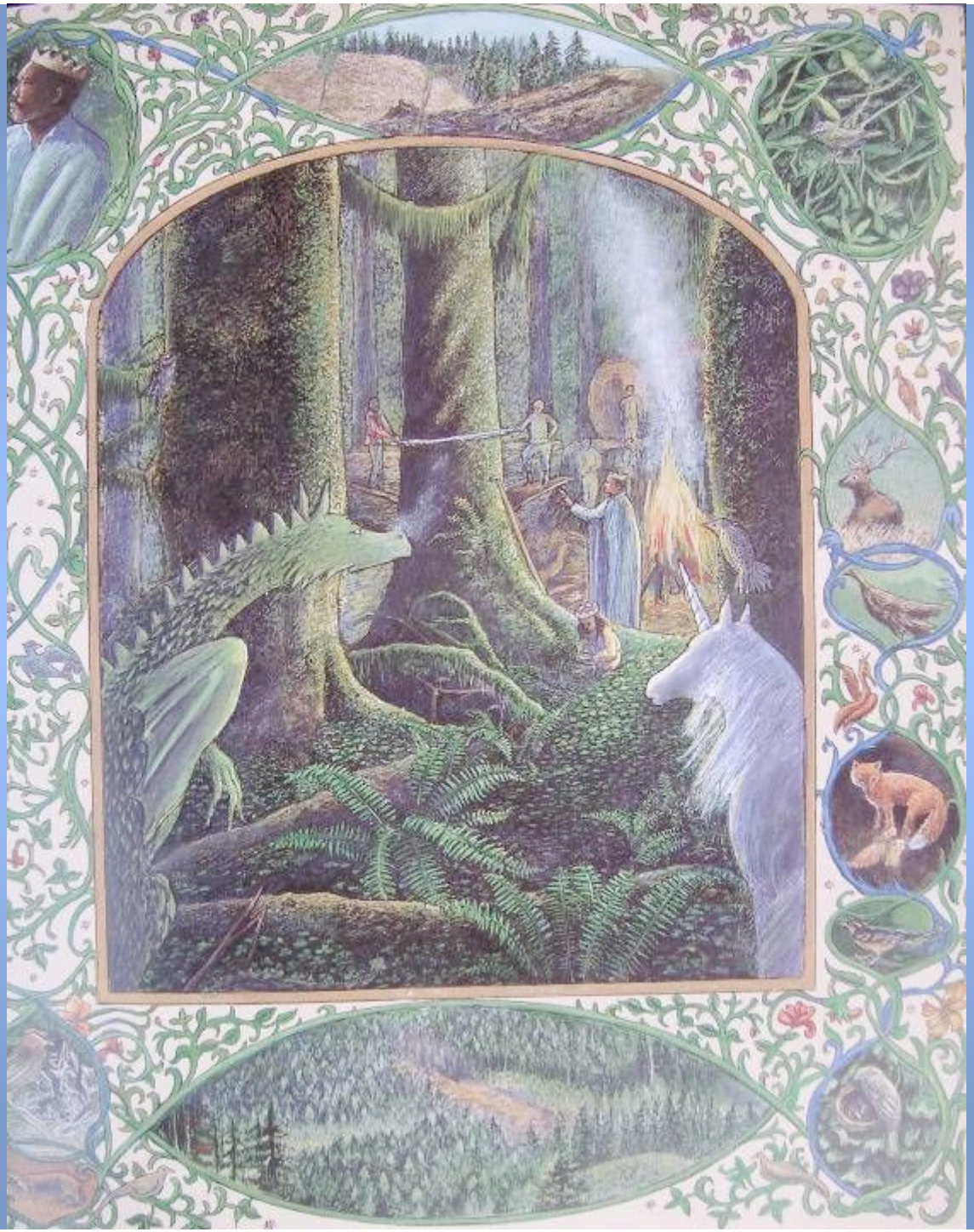
To the memories of
two great conservationists:
Al Gentry and Ted Parker,
whose expertise and dedication
continue to inspire

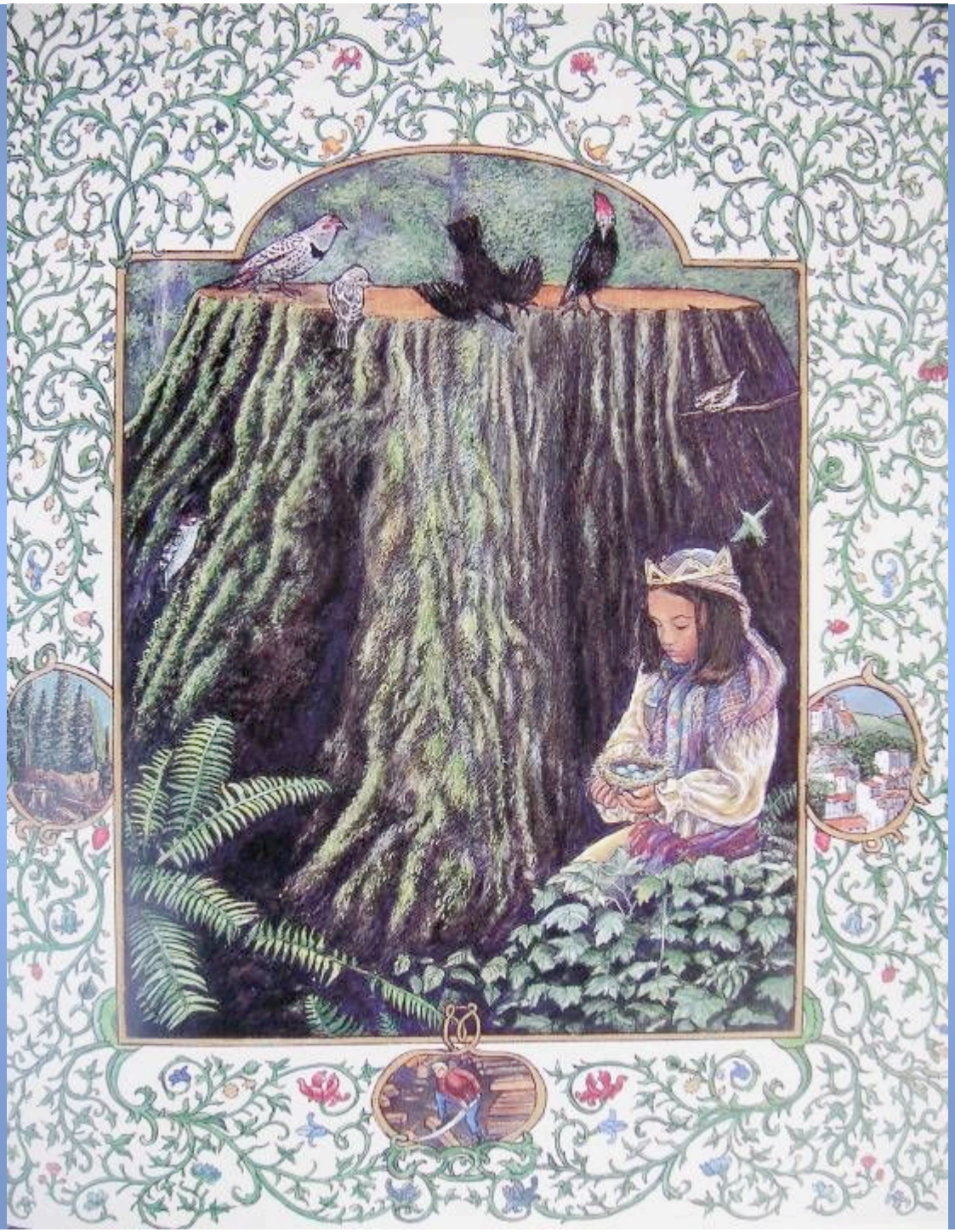


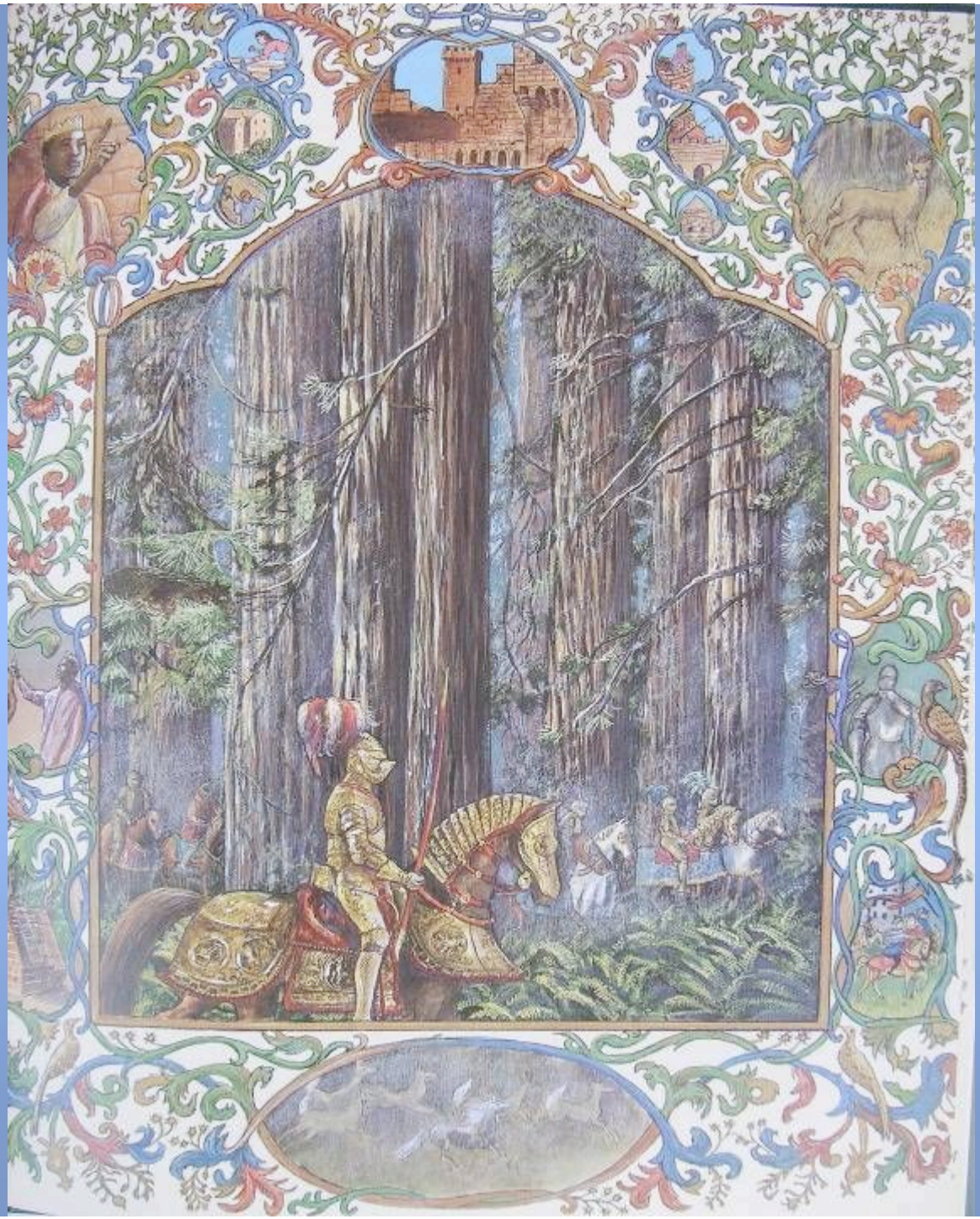


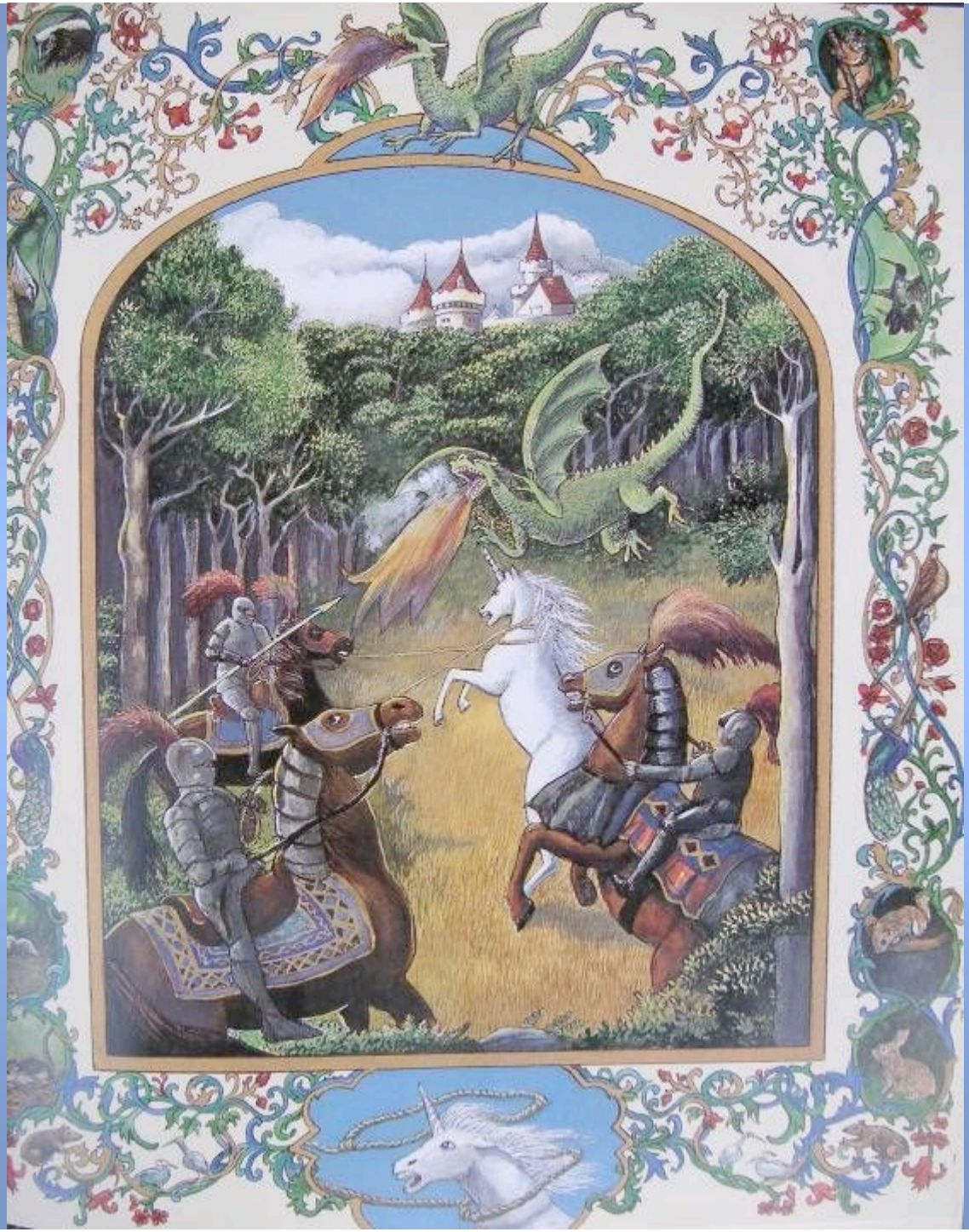

The Dragon
AND THE
Unicorn
WRITTEN AND ILLUSTRATED BY
LYNNE CHERRY

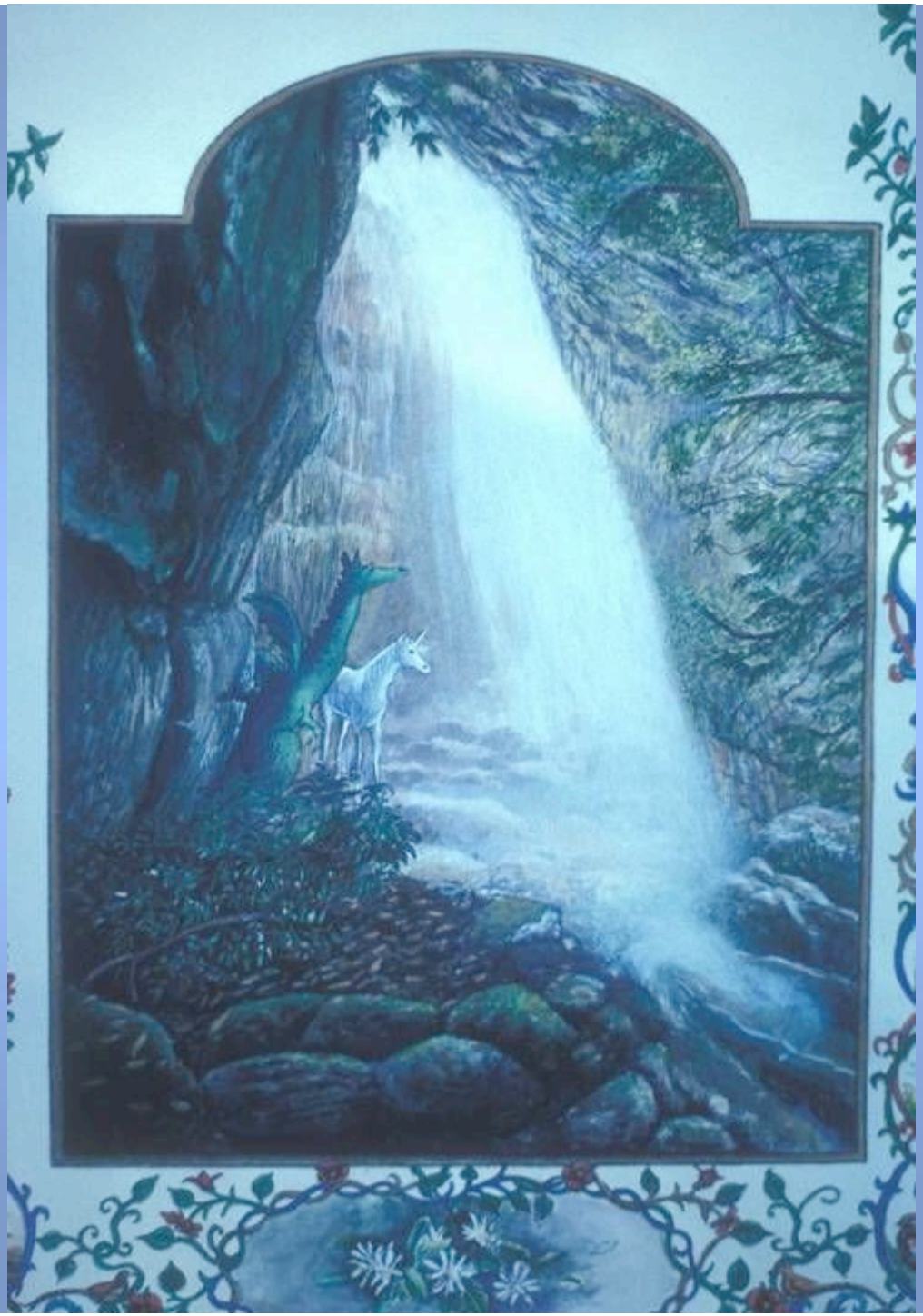


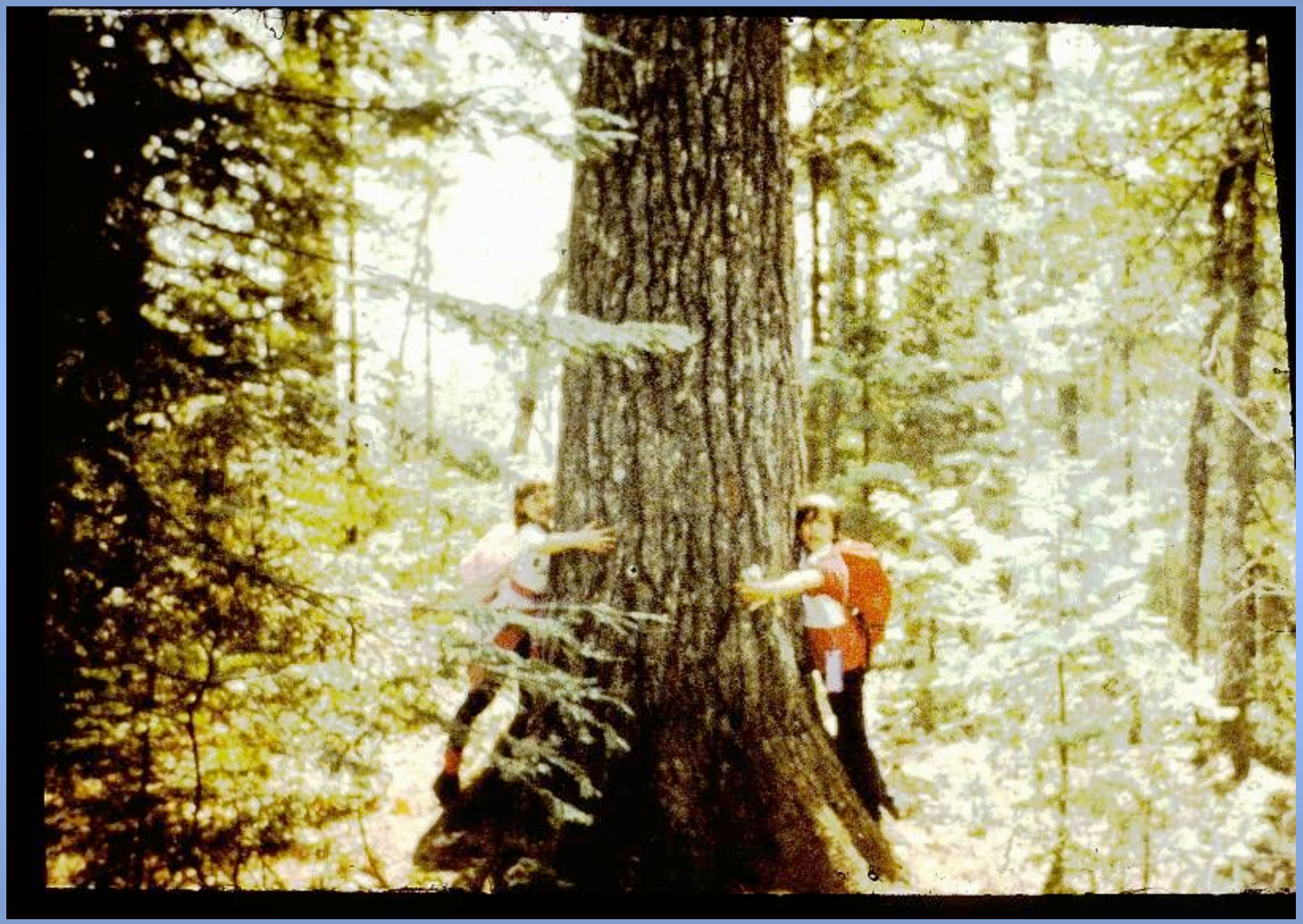




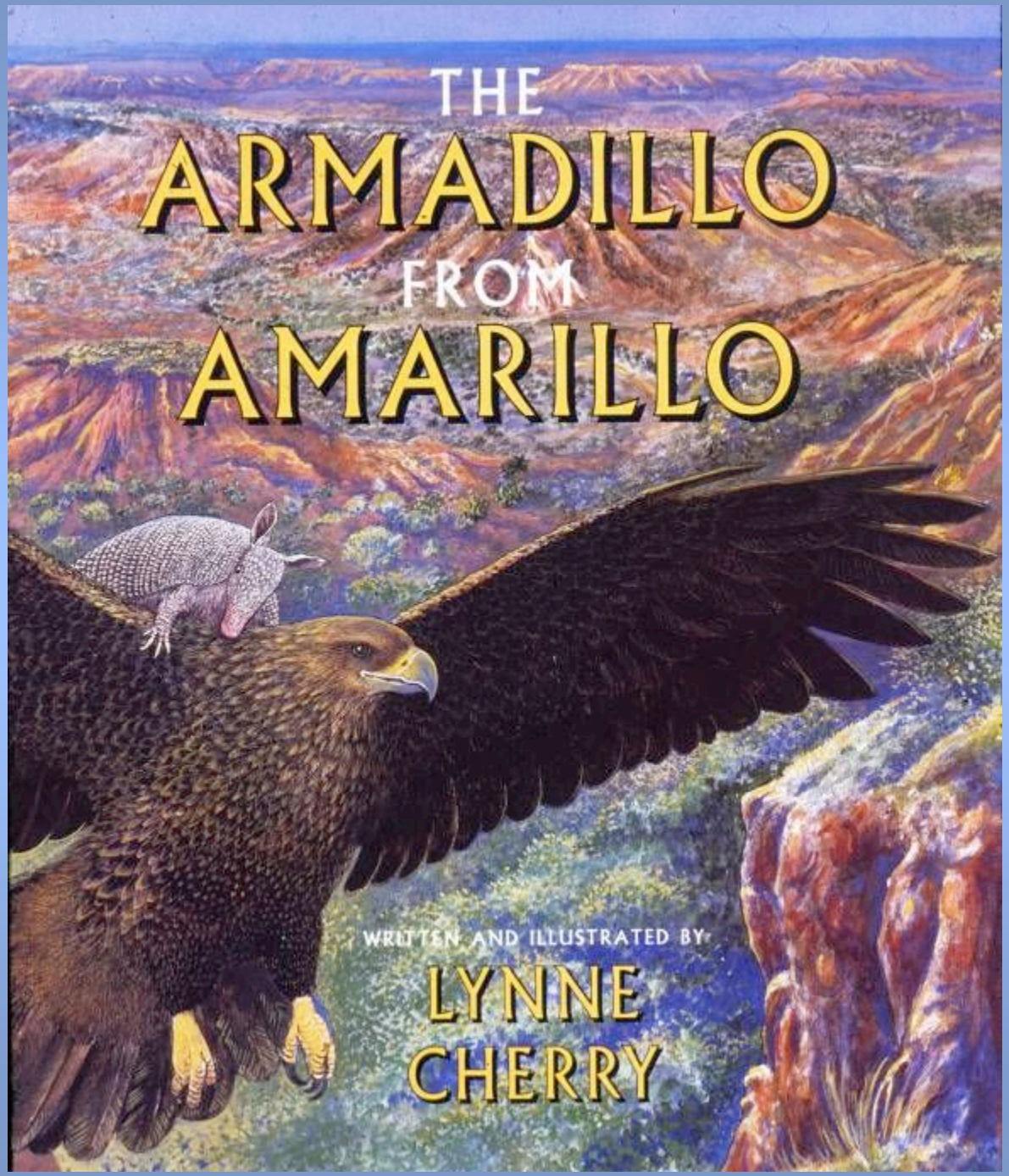


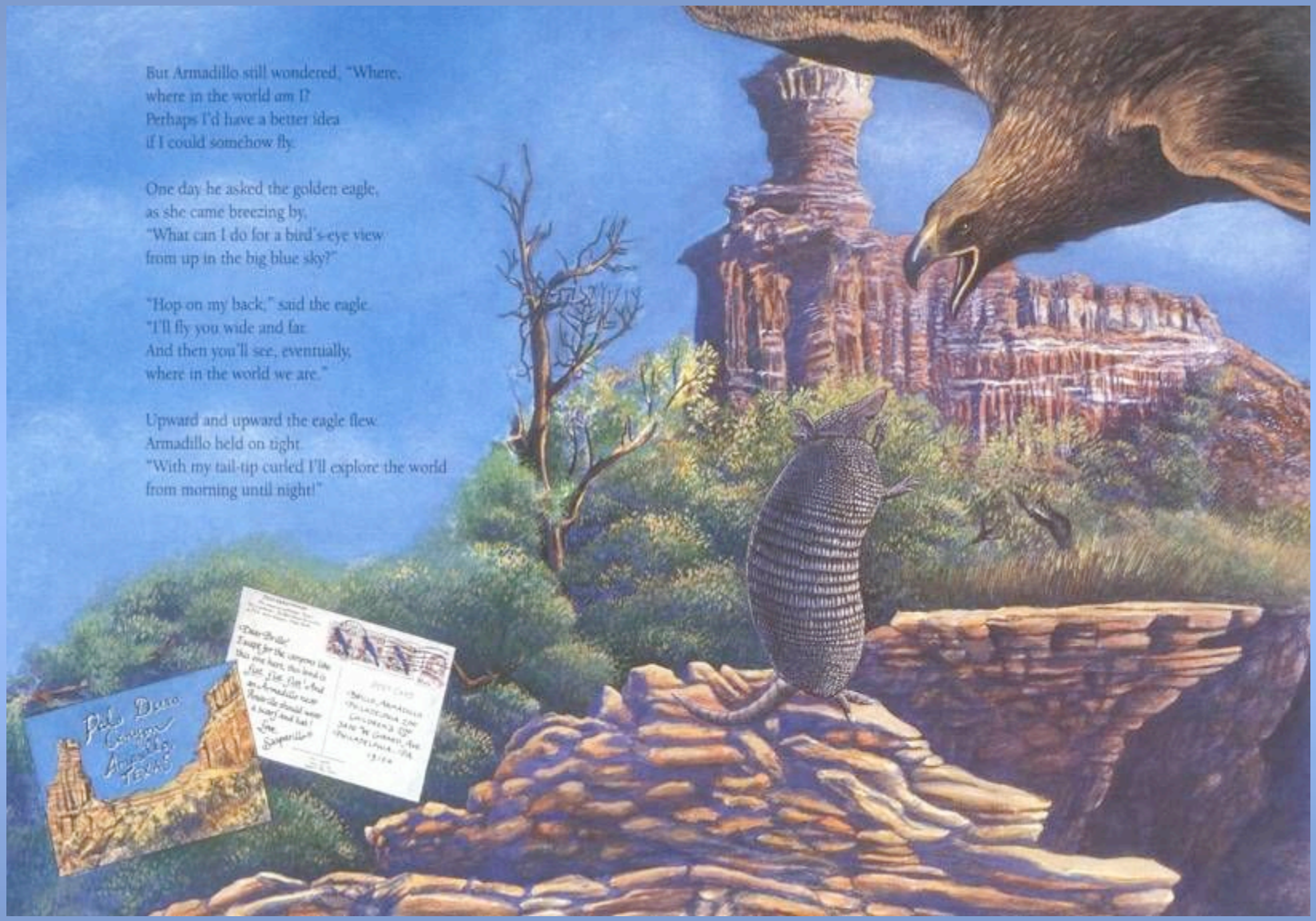


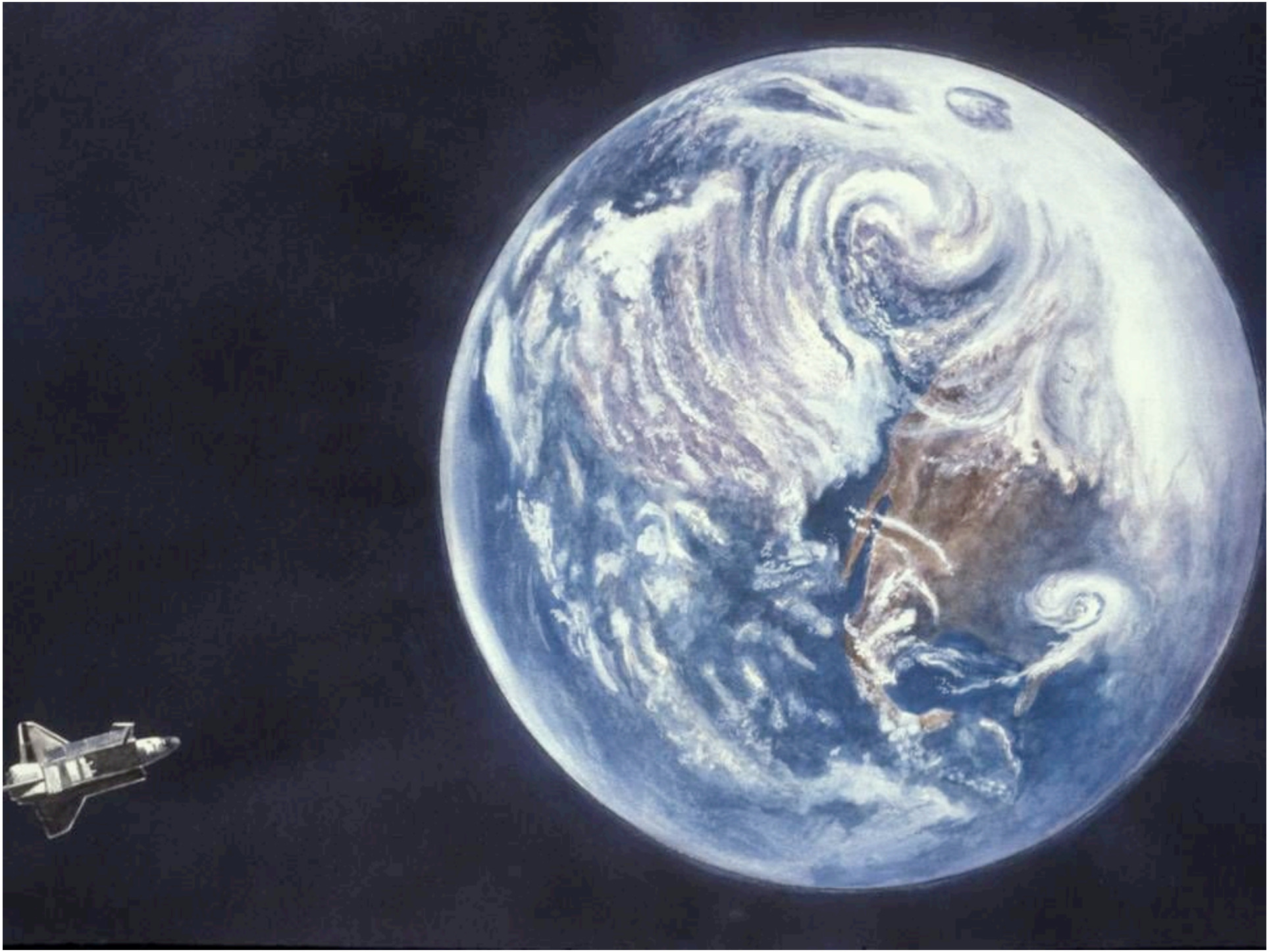


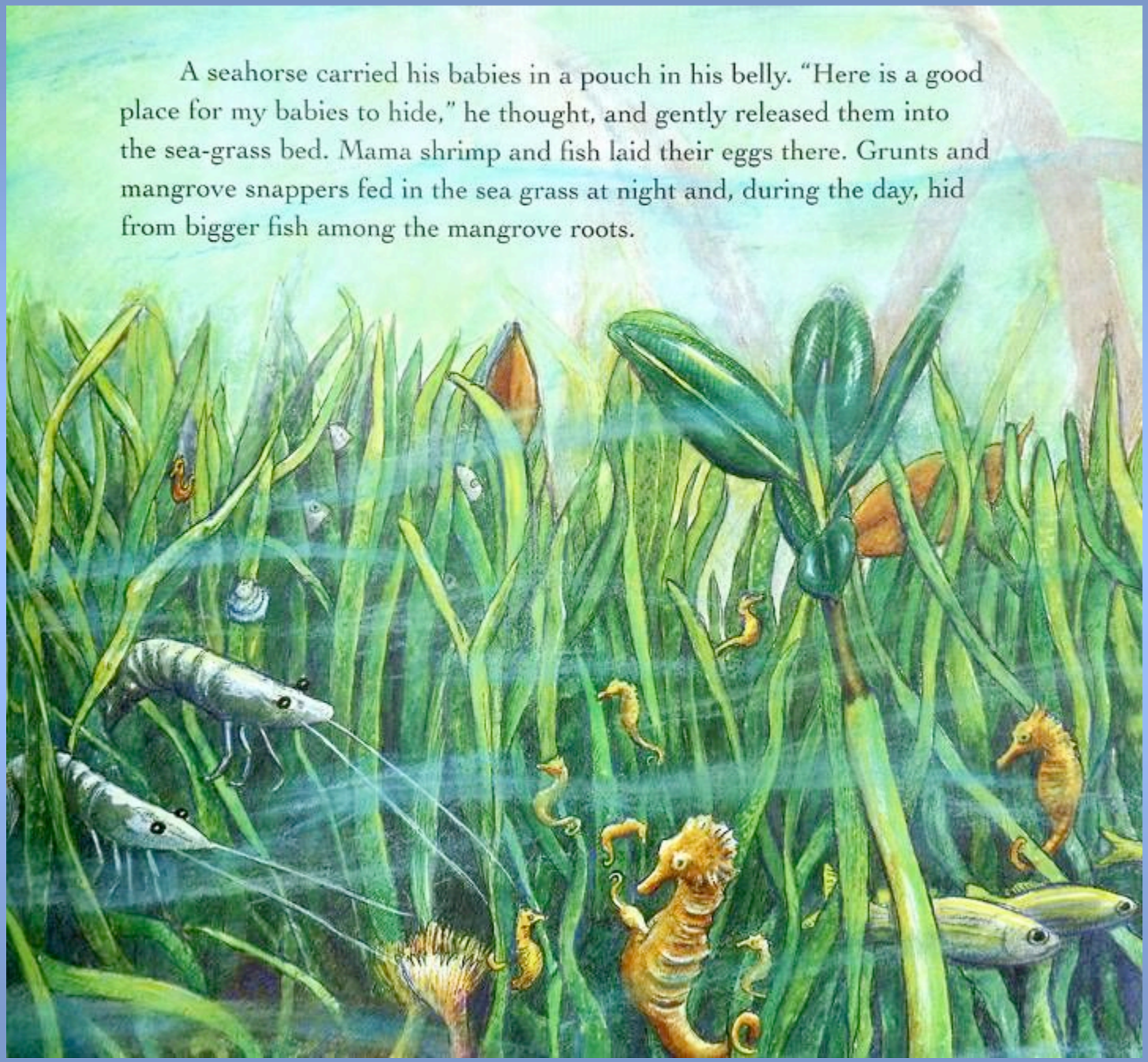



RECYCLE
Recycle
What can you recycle? paper, cans, bottles, glass


THE
ARMADILLO
FROM
AMARILLO
WRITTEN AND ILLUSTRATED BY
LYNNE
CHERRY

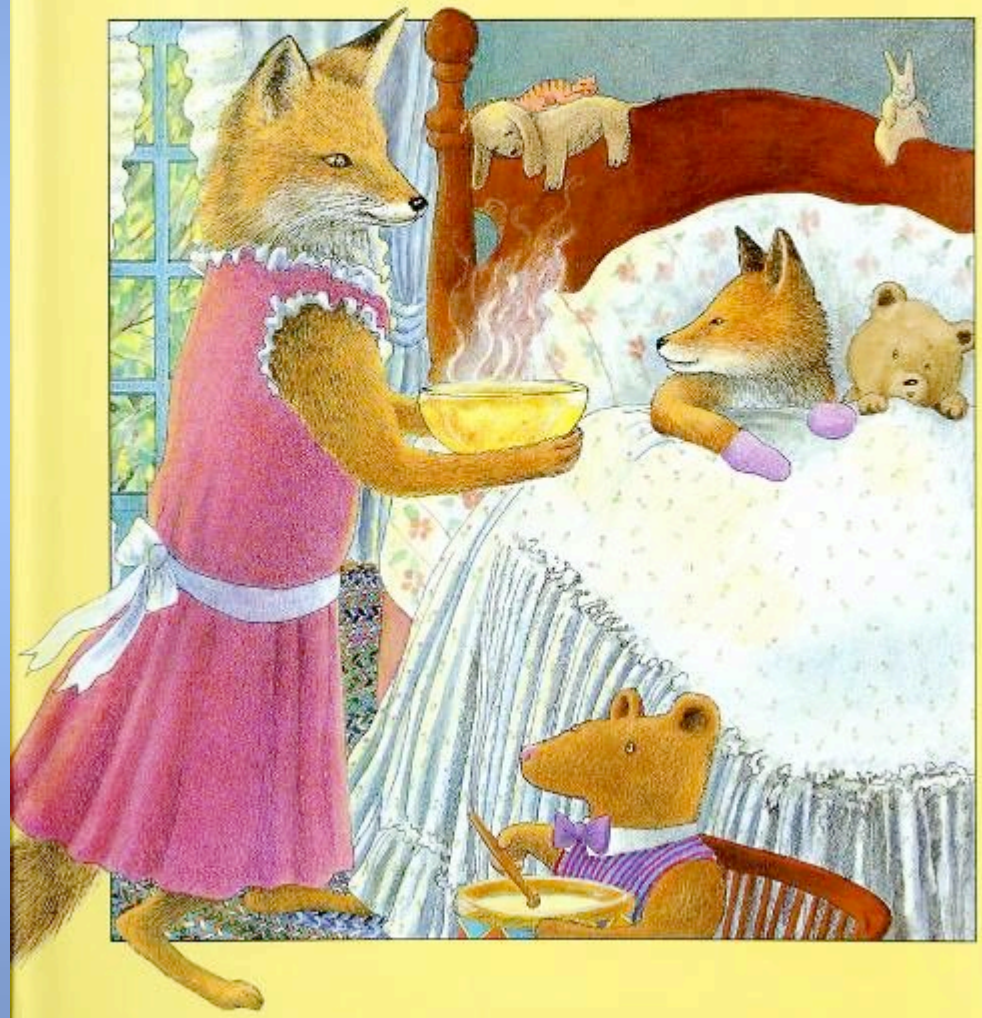

But Armadillo still wondered, "Where,
where in the world am I?
Perhaps I'd have a better idea
if I could somehow fly.
One day he asked the golden eagle,
as she came breezing by,
"What can I do for a bird's-eye view
from up in the big blue sky?"
"Hop on my back," said the eagle.
"I'll fly you wide and far.
And then you'll see, eventually,
where in the world we are."
Upward and upward the eagle flew.
Armadillo held on tight.
"With my tail-tip curled I'll explore the world
from morning until night!"

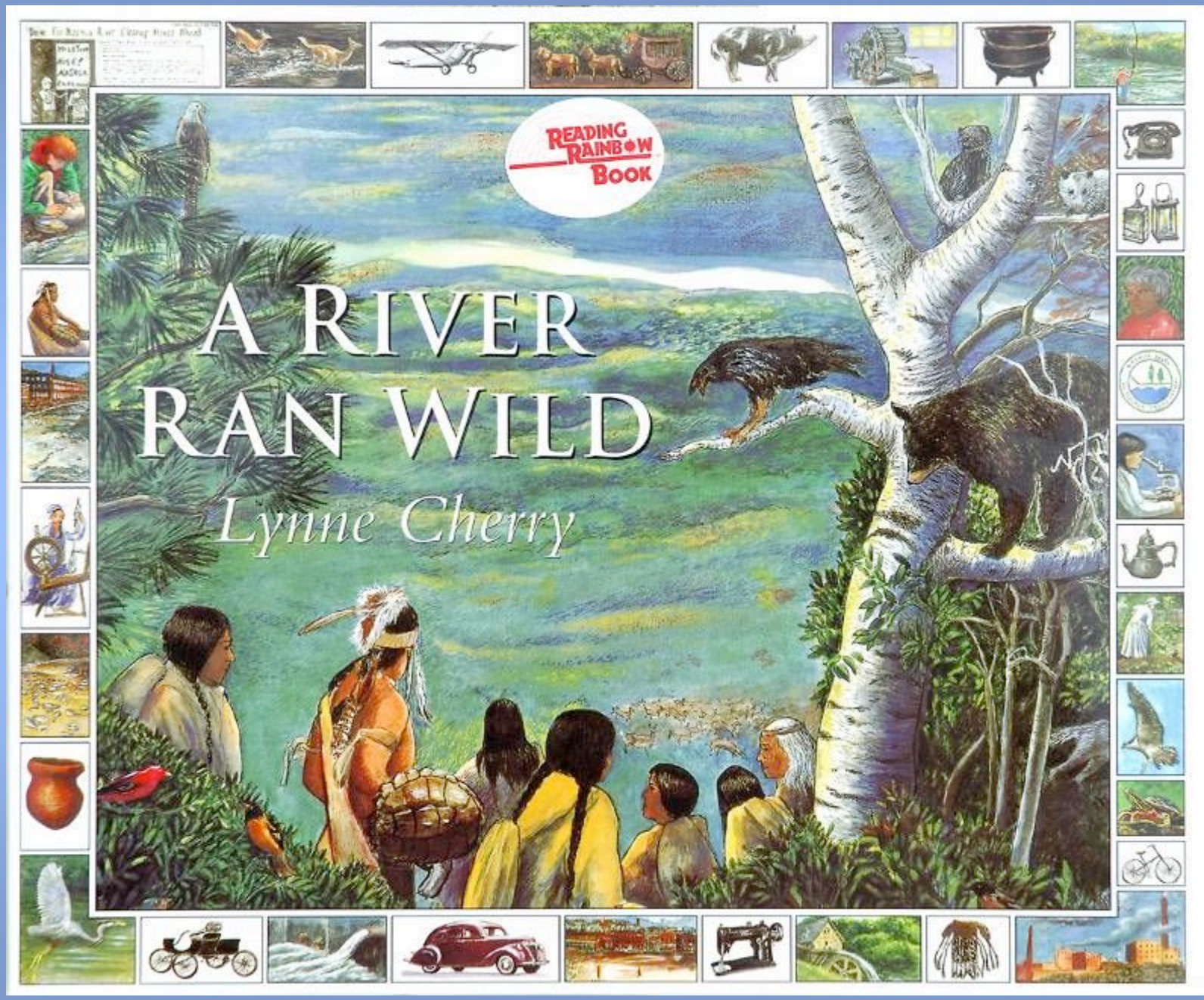


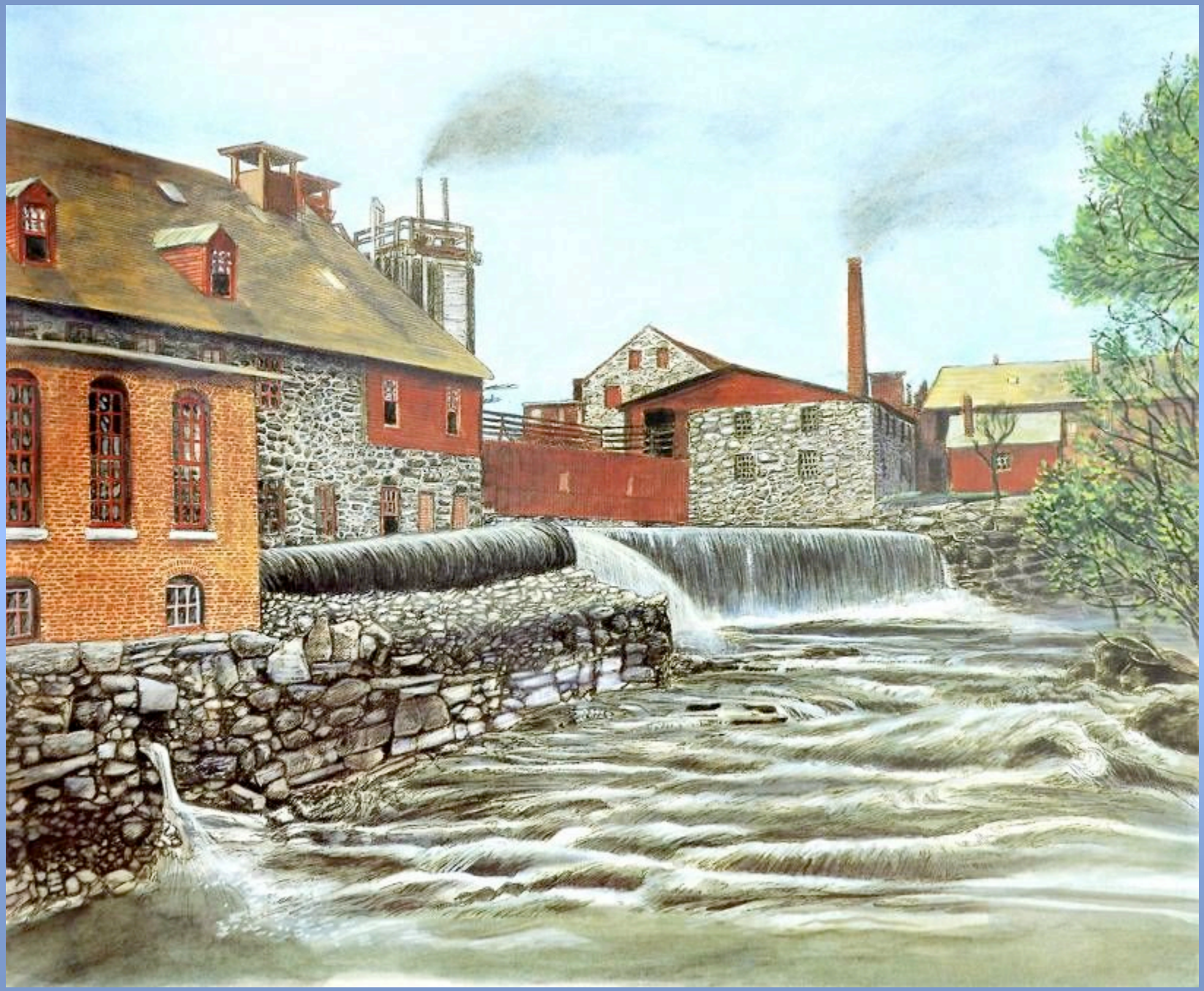

A seahorse carried his babies in a pouch in his belly. "Here is a good place for my babies to hide," he thought, and gently released them into the sea-grass bed. Mama shrimp and fish laid their eggs there. Grunts and mangrove snappers fed in the sea grass at night and, during the day, hid from bigger fish among the mangrove roots.

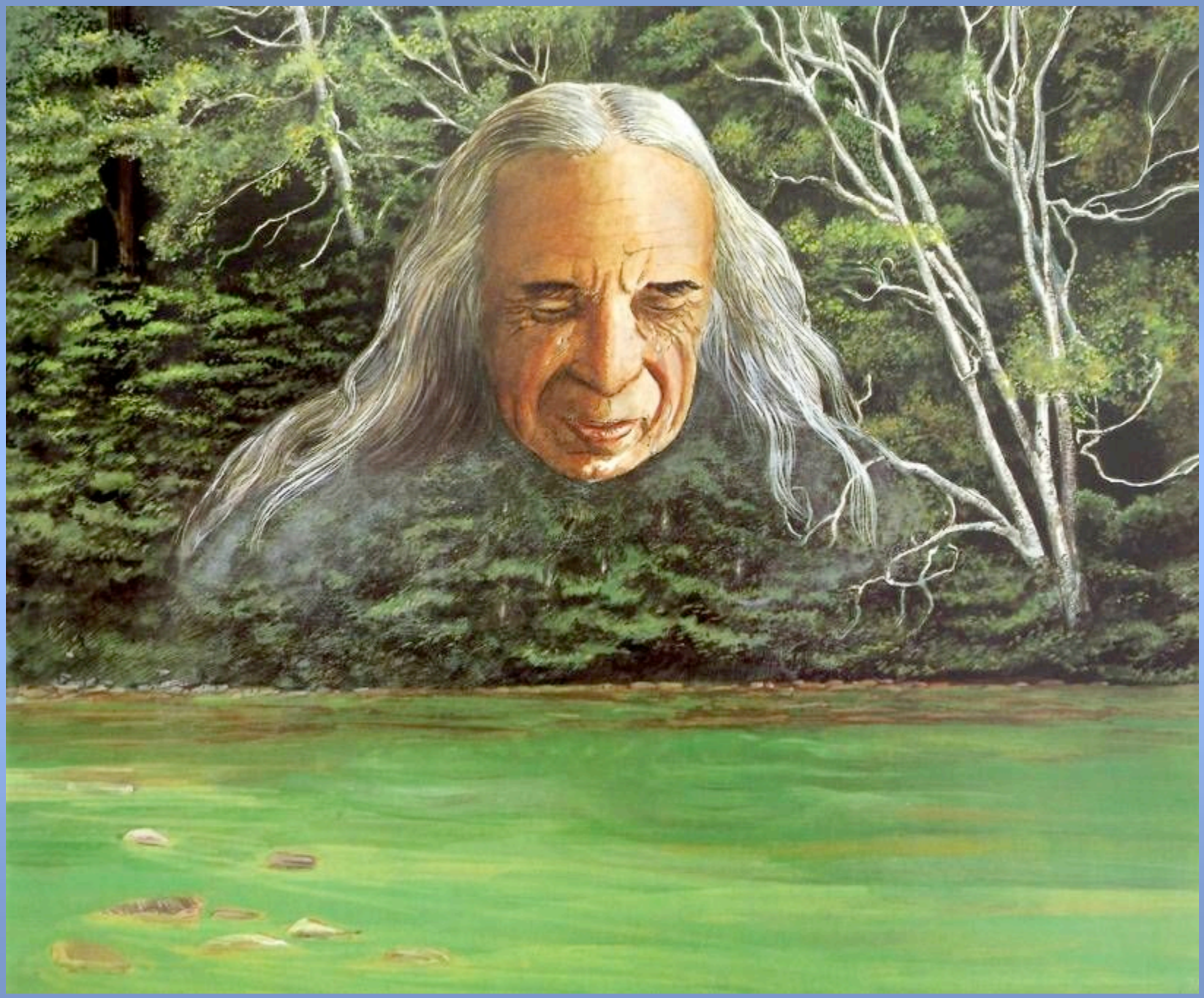
WHO'S SICK TODAY?

by Lynne Cherry



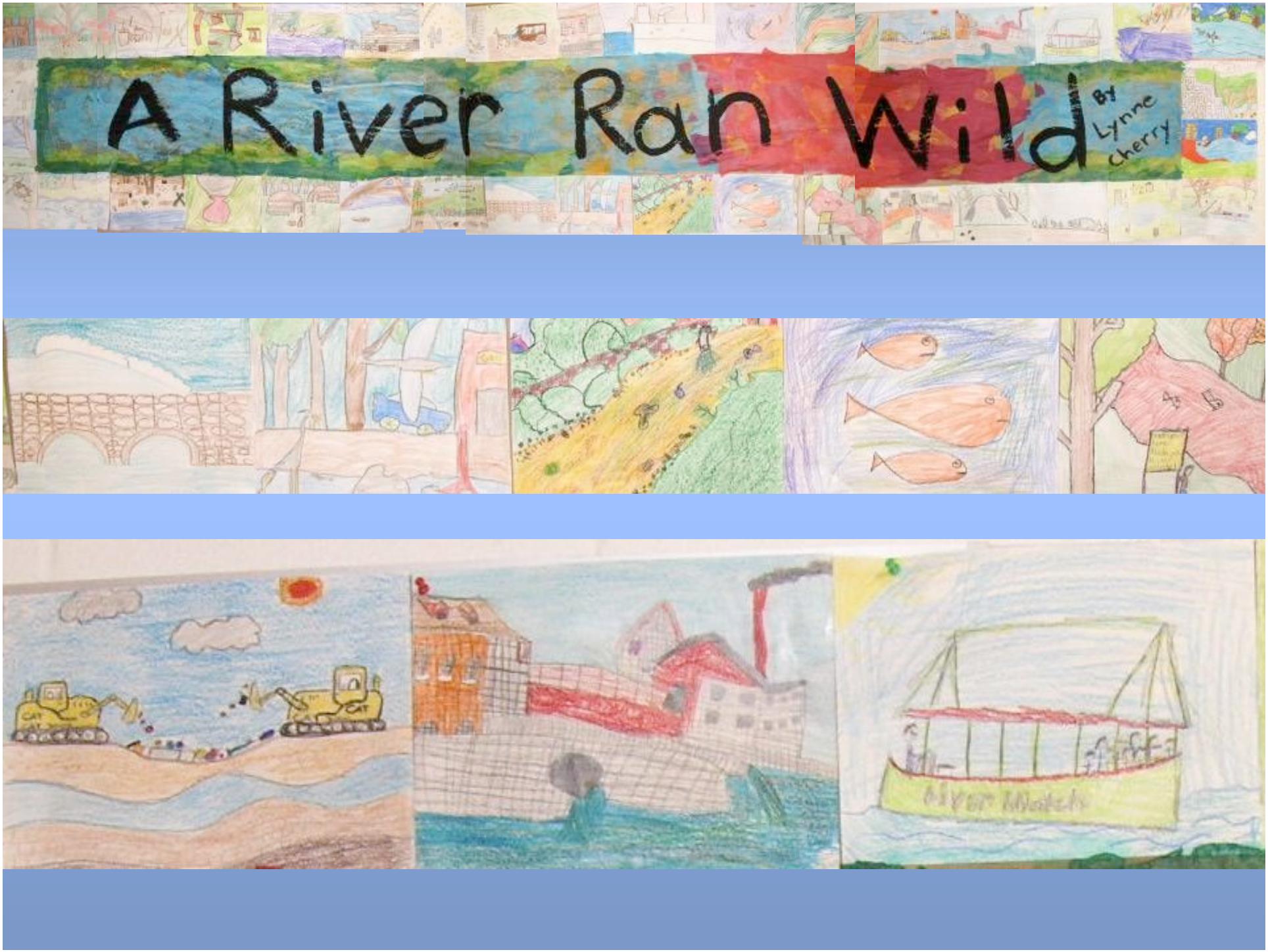

READING RAINBOW BOOK
A RIVER RAN WILD
Lynne Cherry

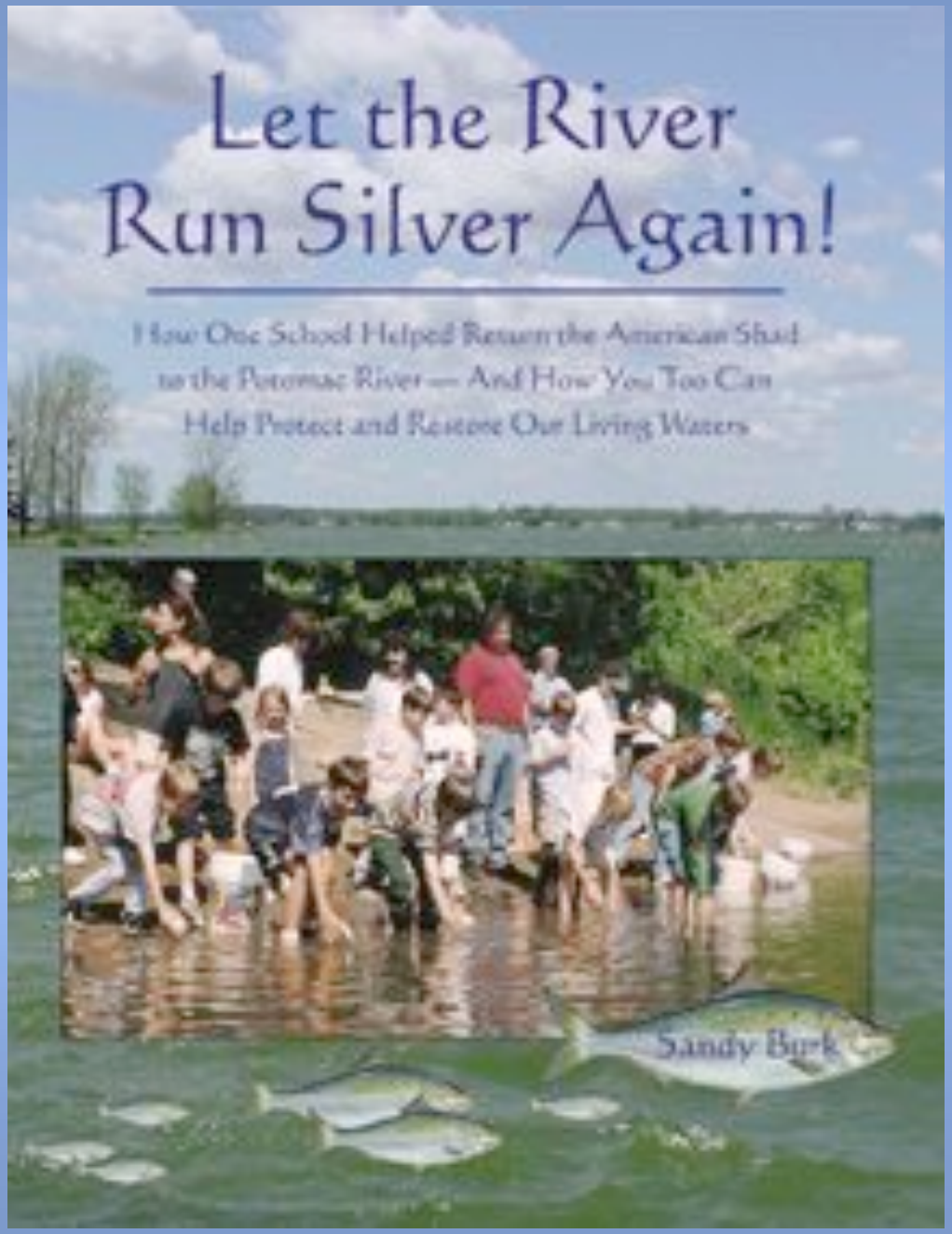


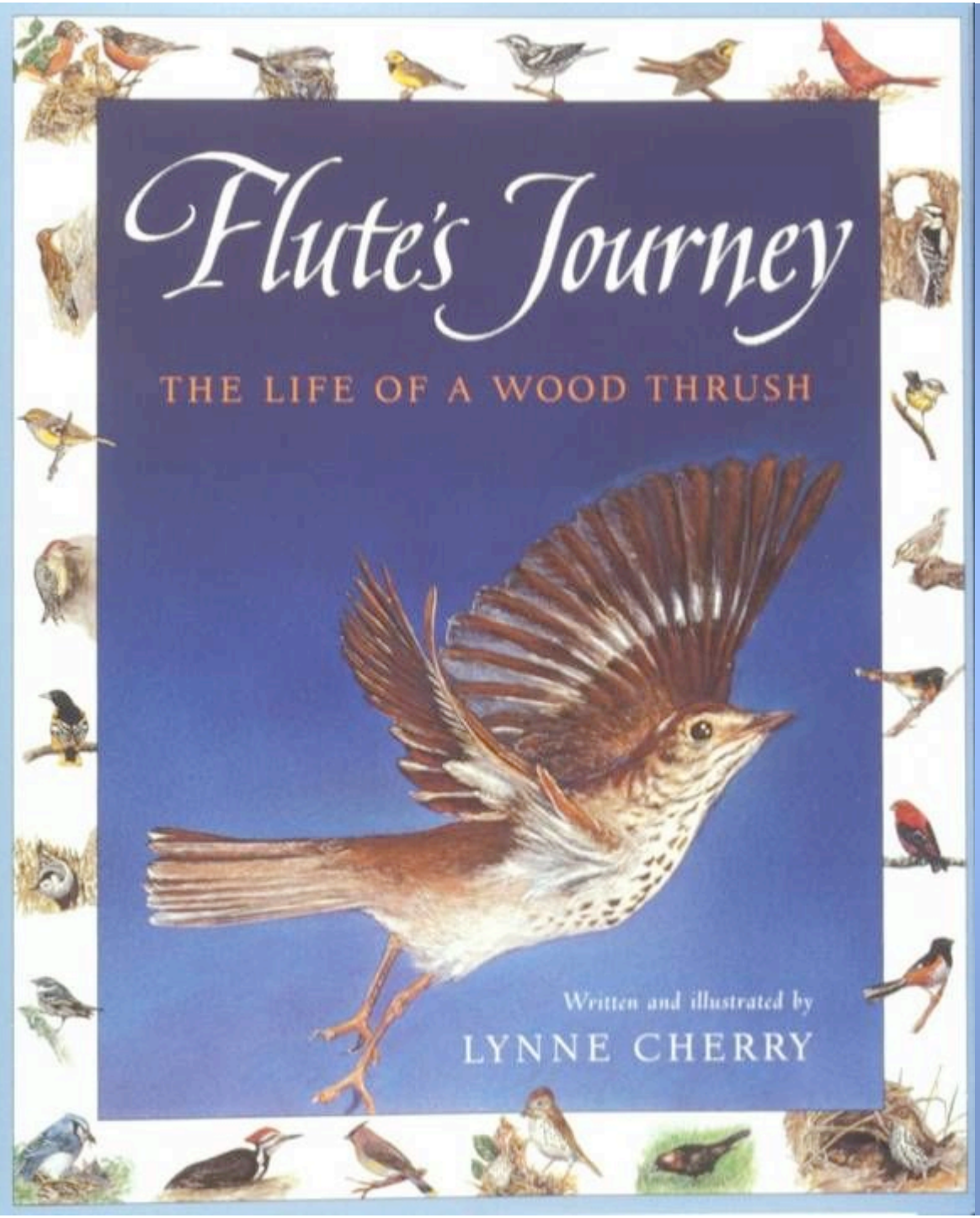


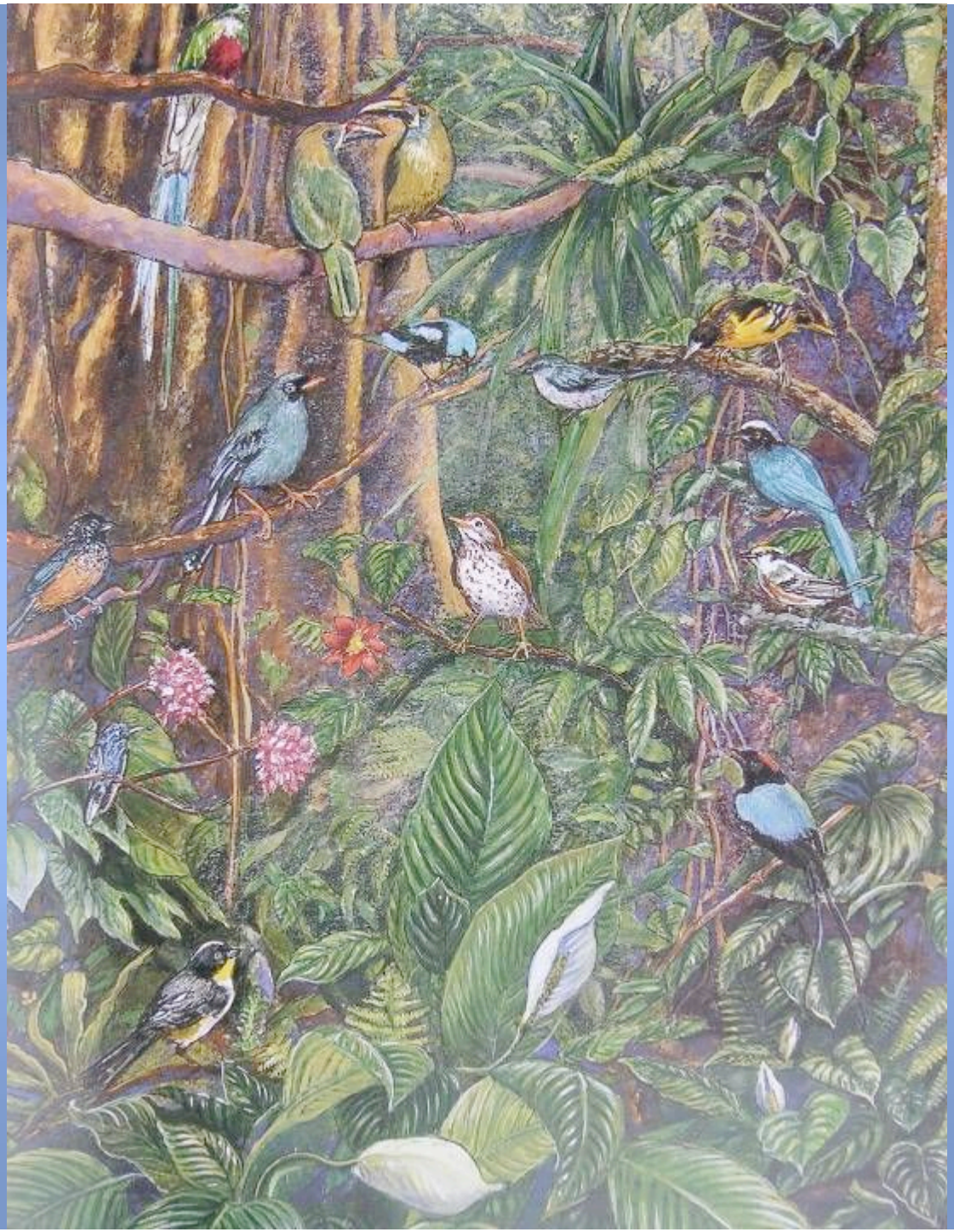

HOLD YOUR
NOSE!
NASHUA
RIVER AHEAD


CB


A River Ran Wild
By Lynne Cherry
RIVER WATCH


Let the River
Run Silver Again!
How One School Helped Return the American Shad
to the Potomac River — And How You Too Can
Help Protect and Restore Our Living Waters
Sandy Bark


Flute's Journey
THE LIFE OF A WOOD THRUSH
Written and illustrated by
LYNNE CHERRY



ree weeks after he had fledged, Flute's parents continued to feed
g July and August, his baby feathers fell out and in their place
ng and lustrous feathers of a handsome juvenile. Now whenever
siblings came around, they were chased off by their parents, who
heir youngsters had learned to take care of themselves.
mber came and a cool breeze ruffled Flute's feathers. Autumn
d gold, red, and yellow. The shorter days and the dwindling light
gave the birds the urge for going. Flute ate as many berries and insects as he could find and stored up fat—energy for the long flight ahead.

Then, one evening, as if a message was carried on the wind, Flute and many other wood thrushes lifted up from the forest and took to the air. The stream of songbirds flew south, joined along the way by other streams, until river of migrating birds traveled together through the night, thousands of feet above the ground, protected from hawks by the darkness.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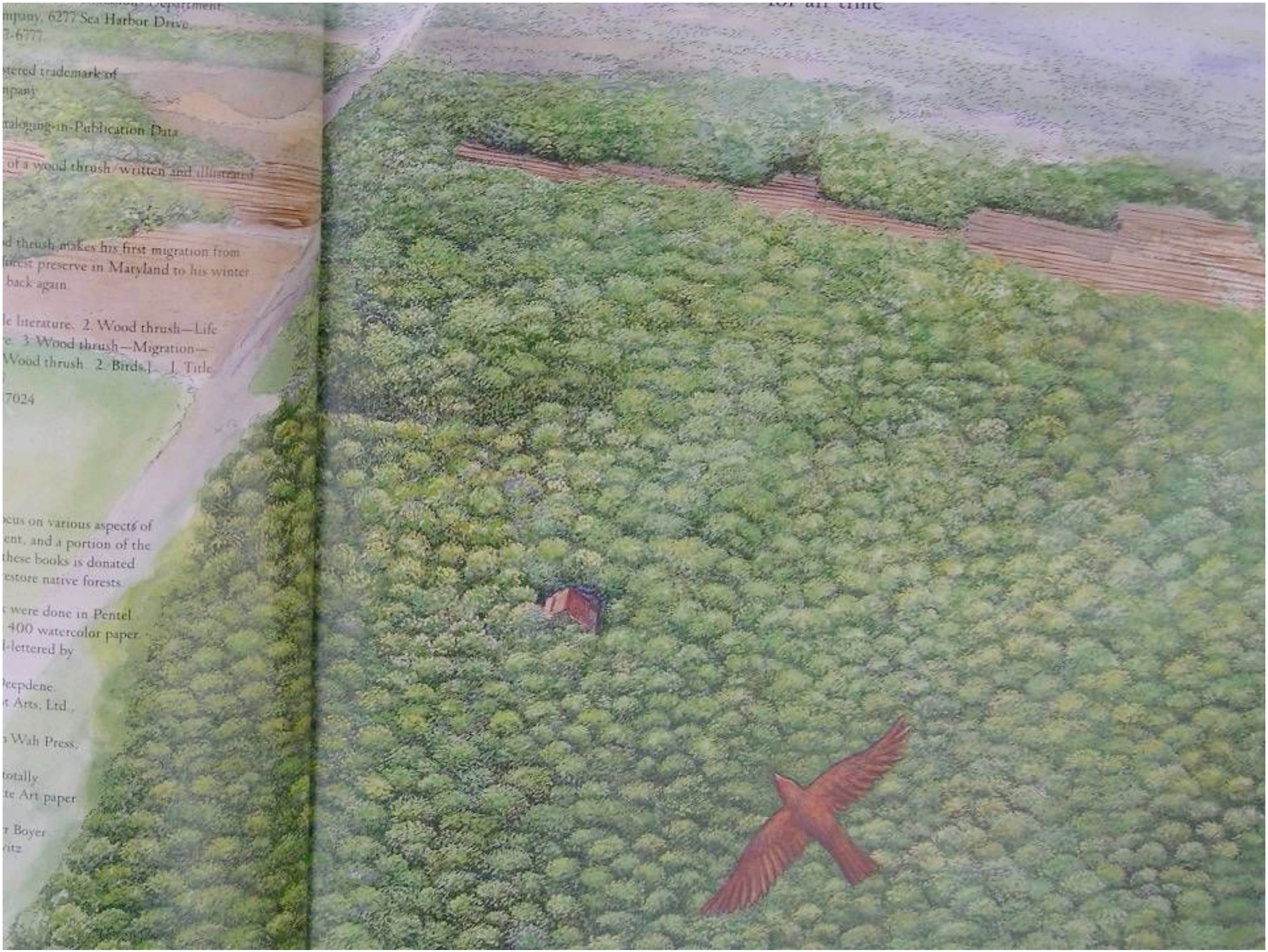
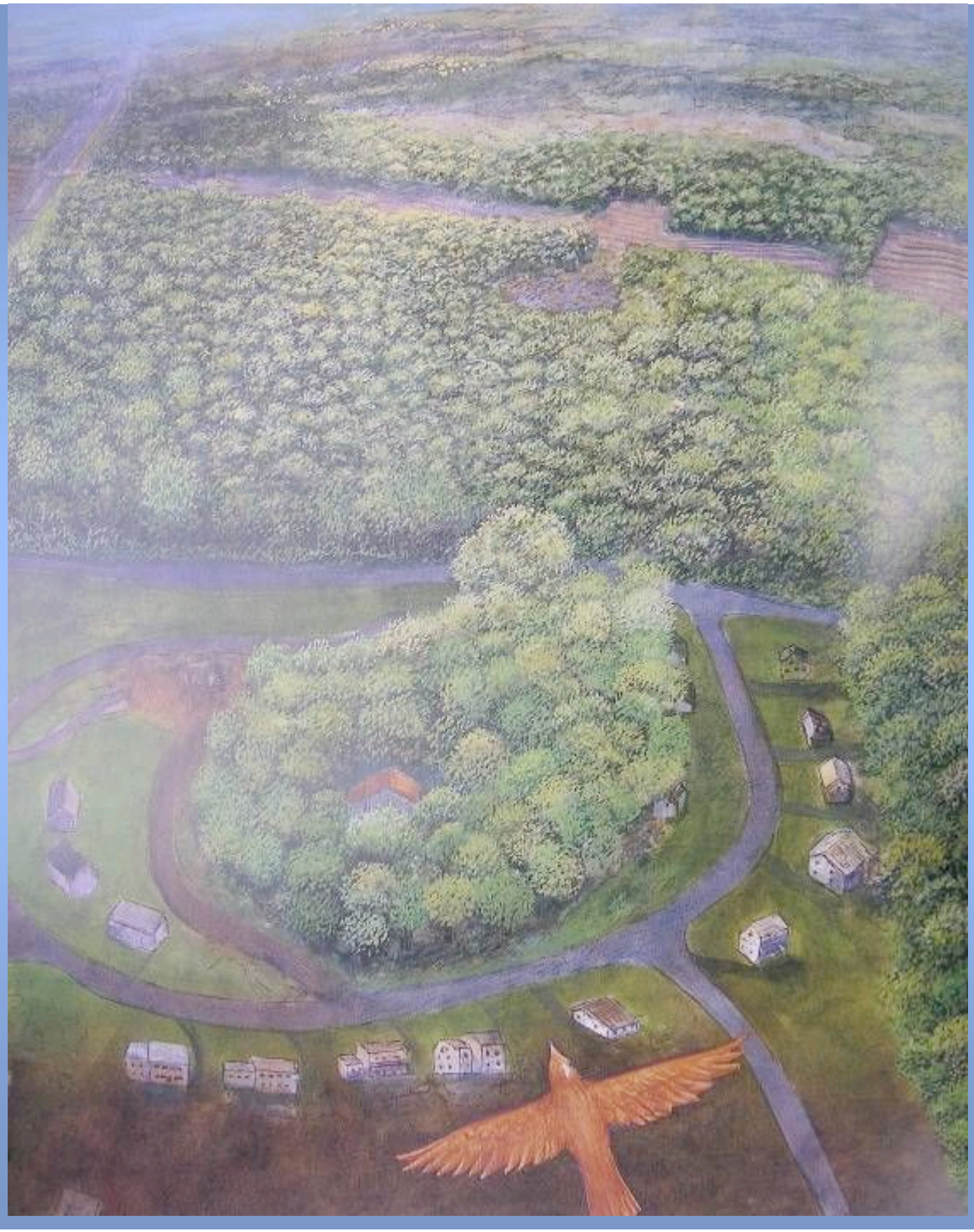


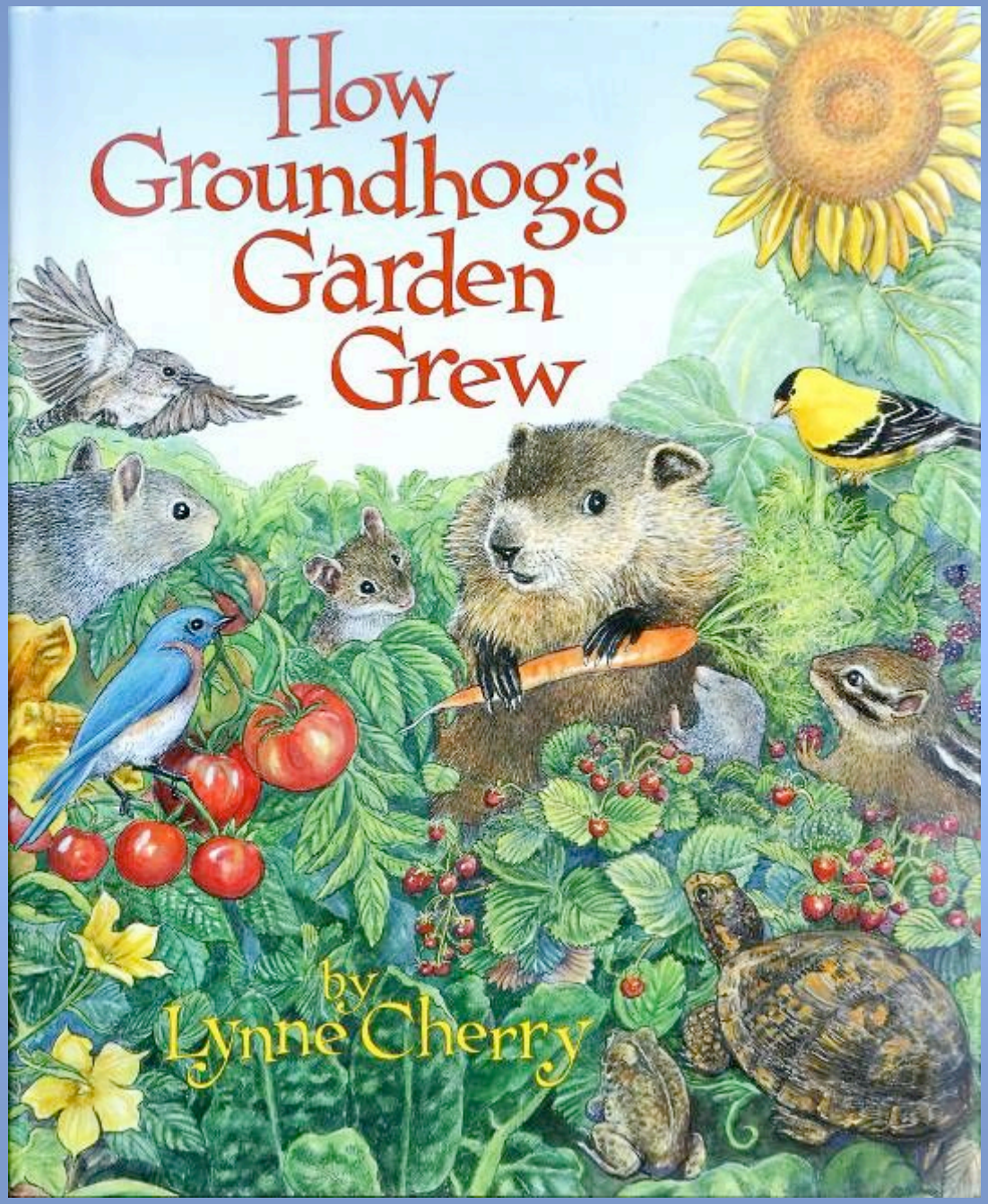



TURTLE
CROSSING

Create Bird Habitat & Make the Schoolyard a Nature Center

Make the School a Microcosm of What You Want the World to Become

- See links on my website *LynneCherry.com* to
- Journey North
- Nat'l Wildlife Federation Backyard & Schoolyard Habitat programs
- Cornell Lab of O's Project Feeder Watch
- Overarching Bird Curriculum at Ramsey Elementary
- CITIZEN-SCIENTISTS


How Groundhog's Garden Grew
by Lynne Cherry

"First, we'll cut them into little pieces with two sprouts each. Then, we'll plant them with their sprouts pointing up and cover them with soil. Each sprout will grow into a new potato plant. Next fall, we'll dig new potatoes out of the ground. Now let's find a sunny place for your garden!"


How Gumdrops Garden Grew


syrphid flower fly
blueberry bee
parasitic wasp
alfalfa leaf-cutter bee
metallic agapostemon sweat bee
squash bee
wren
Wren and Praying Mantis said to Little Groundhog, "If you promise not to harm us with bug spray, we birds and insects will help you with your garden. We will eat the harmful insects that hurt your plants." Little Groundhog promised.
lightning bug or firefly
firefly larvae
ladybug, ladybird or ladybeetle
braconid parasite
thread-waisted wasp
green lacewing
As the weeks passed, plants grew and blossomed. Bees, flies, and butterflies came to eat the sweet nectar and carried pollen from flower to flower. They told Little Groundhog, "The wind, the rain, and we insects pollinate your flowers so they can become fruits and vegetables."
blue orchard bee
male halictid bee
female halictid

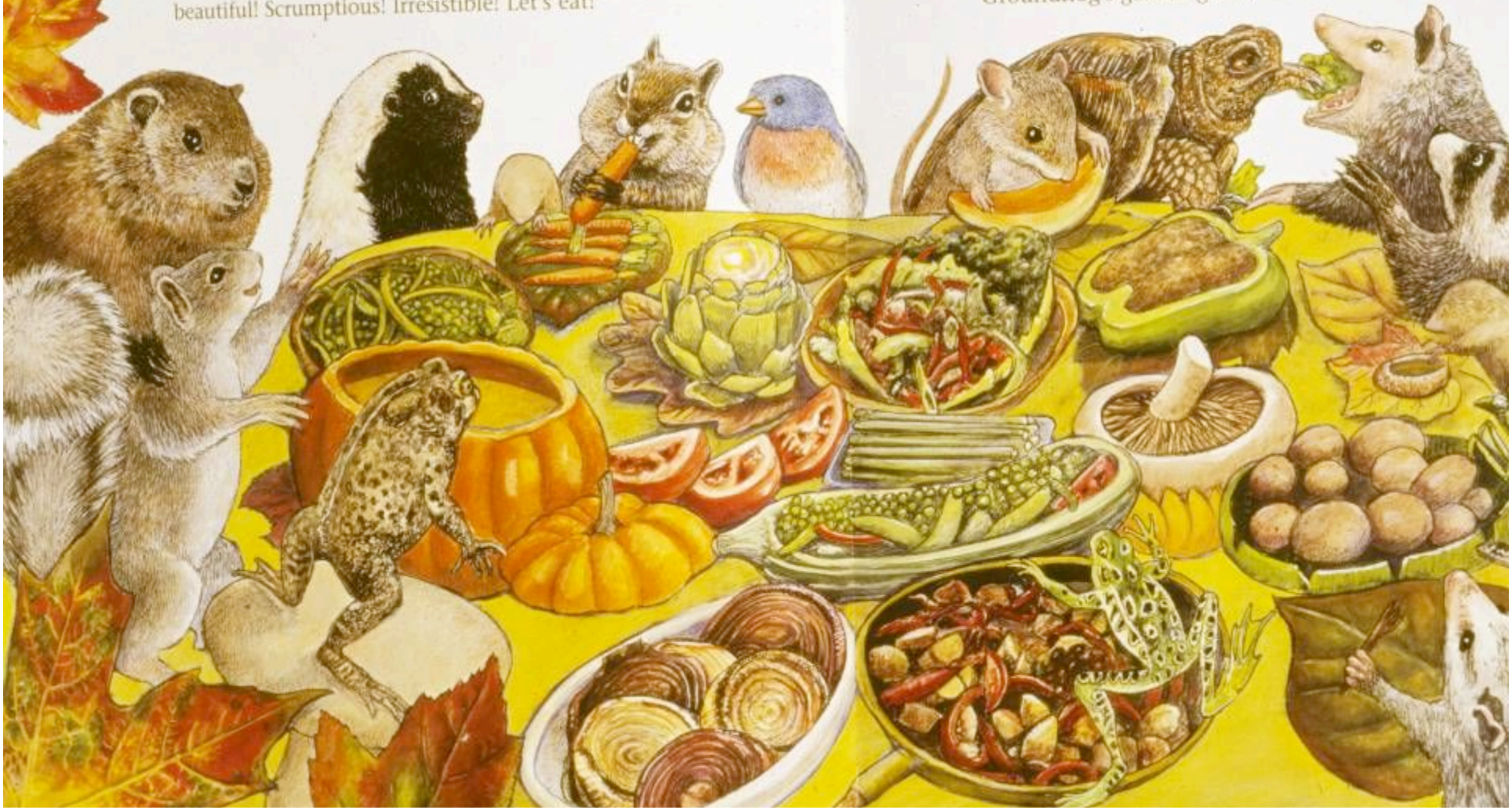
"What a great idea!" cried Little Groundhog.

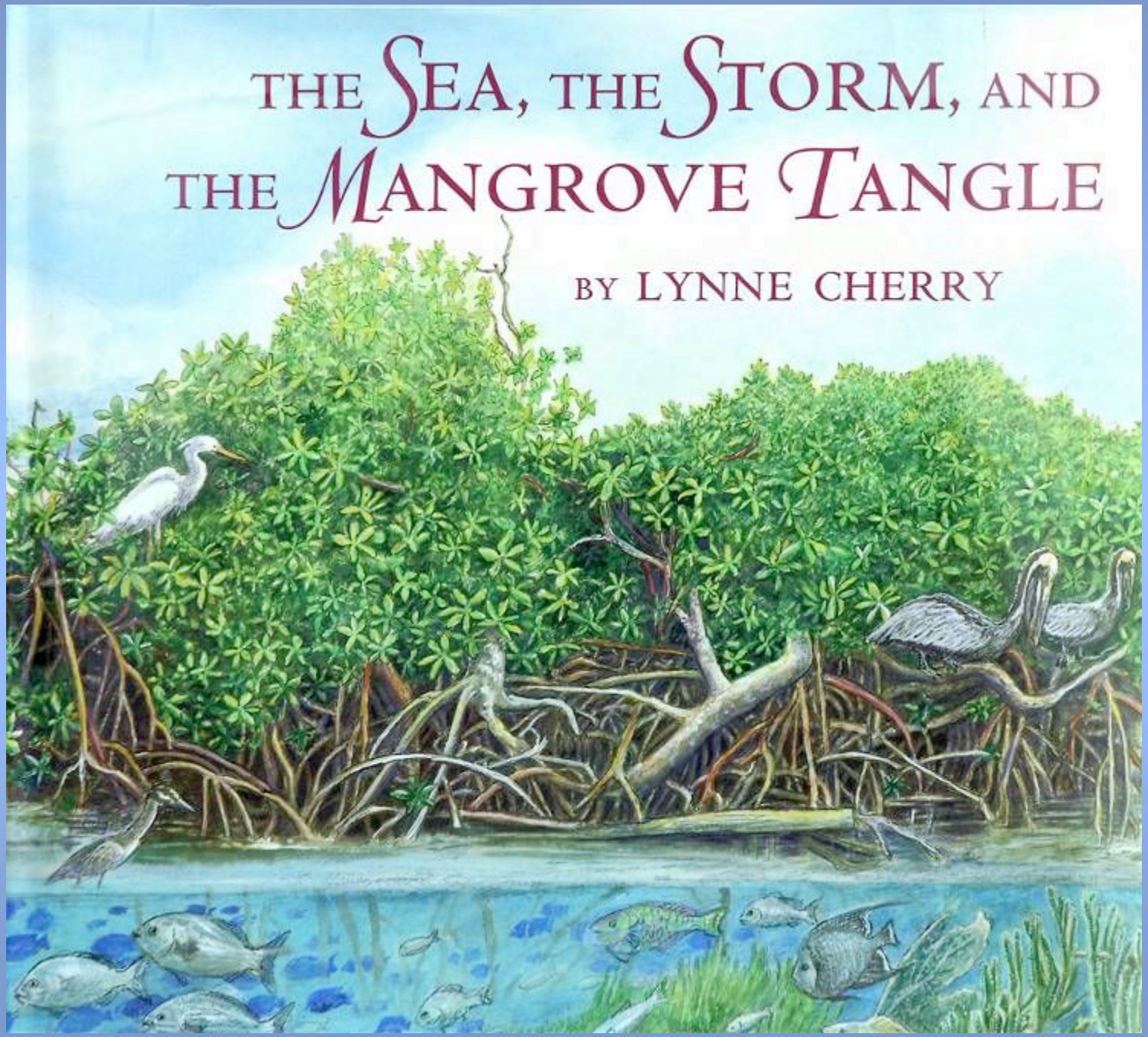
As they sat around the table, their friends exclaimed, "Thank you for inviting us to this amazing feast!"

Little Groundhog replied, "Thank you all for forgiving me for eating from your gardens last year. And thank you, Squirrel, for teaching me to grow my own! It's beautiful! Scrumptious! Irresistible! Let's eat!"

"What a fortunate creature I am," he thought. "Delicious, nutritious, homegrown food and wonderful friends to share it with."

Little Groundhog grew into a big groundhog and became known far and wide for his annual Thanksgiving dinner. And that is how Groundhog's garden grew!

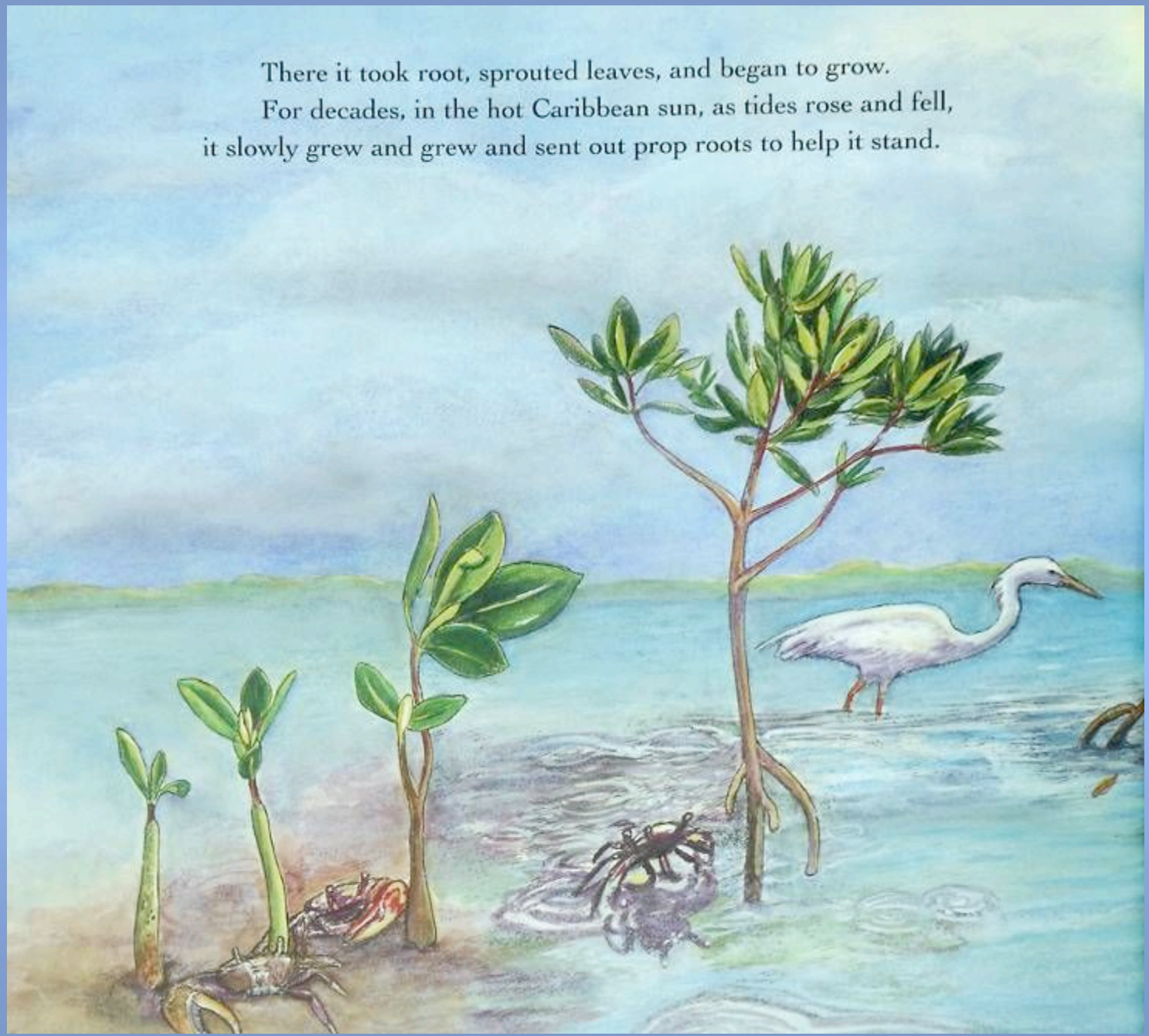


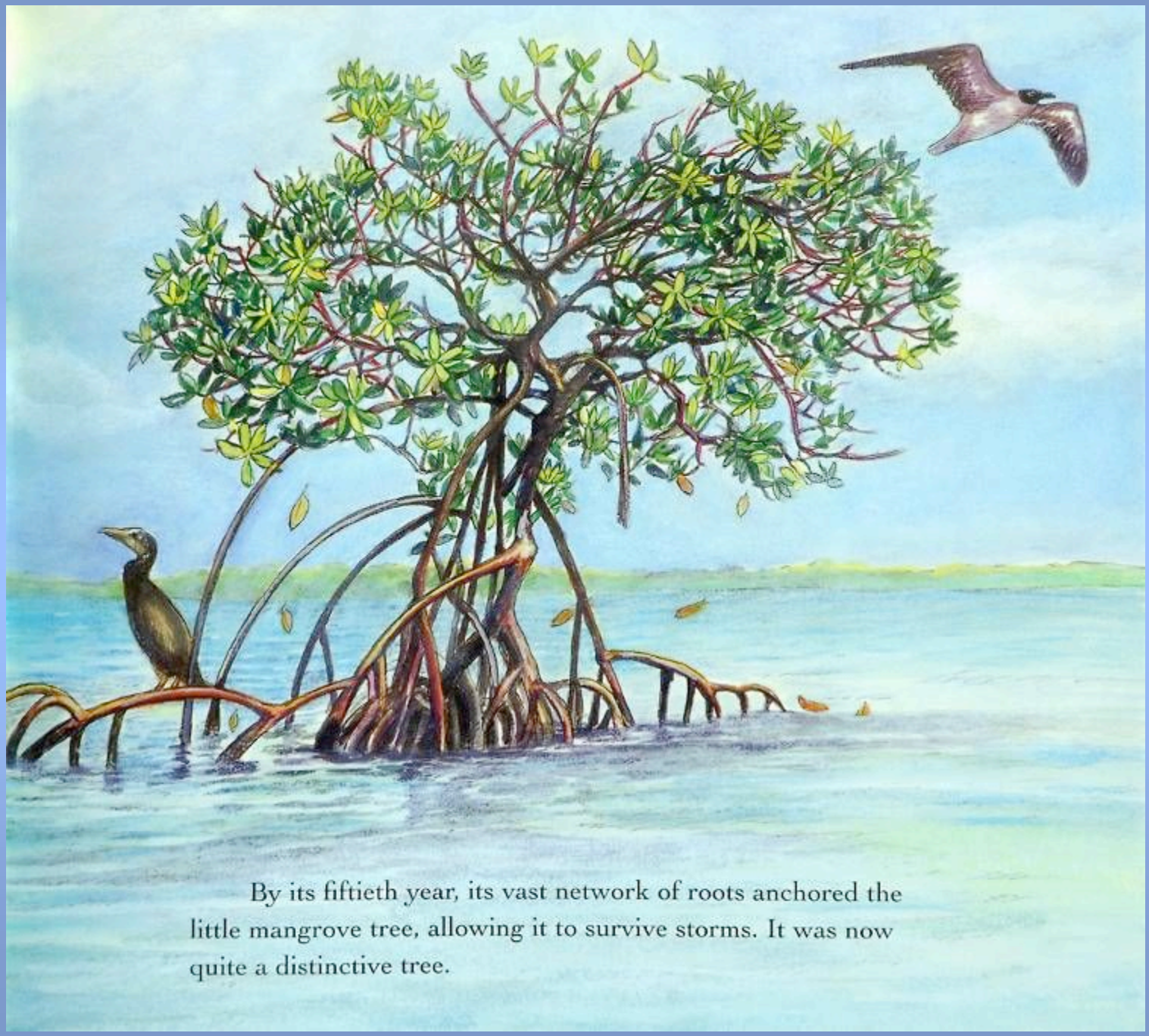

THE SEA, THE STORM, AND
THE MANGROVE TANGLE
BY LYNNE CHERRY

Mangroves are essential as:

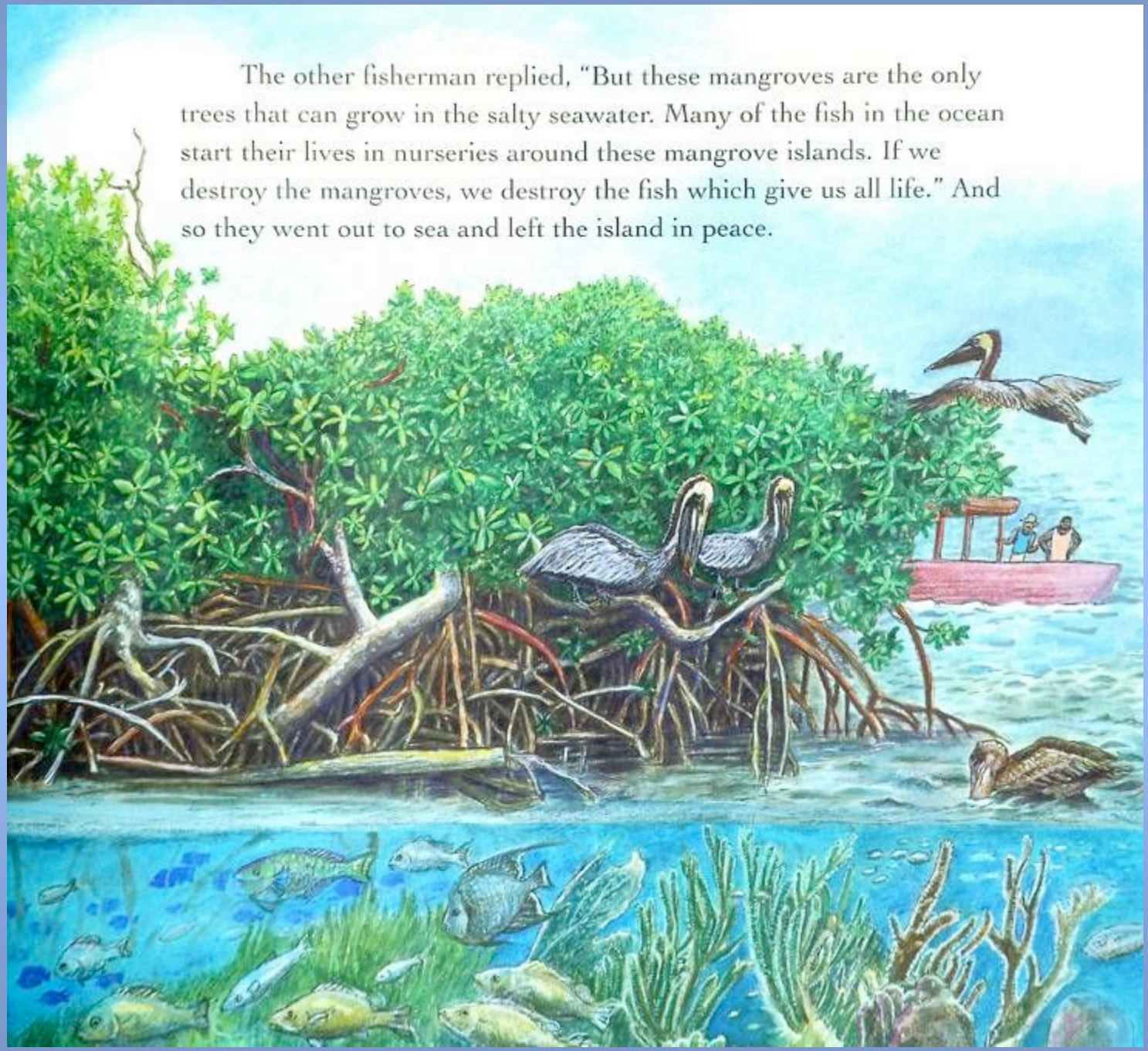
- Buffers for coastal communities against hurricanes, tropical storms and tsunamis
- Nurseries for the fish in the ocean including shrimp, conch, bonefish.
- Habitat for many birds and other endangered species
- Strainers to protect the coral reef from sedimentation
- Precursors to the formation of seagrass beds

There it took root, sprouted leaves, and began to grow.
For decades, in the hot Caribbean sun, as tides rose and fell,
it slowly grew and grew and sent out prop roots to help it stand.





By its fiftieth year, its vast network of roots anchored the little mangrove tree, allowing it to survive storms. It was now quite a distinctive tree.


The other fisherman replied, "But these mangroves are the only trees that can grow in the salty seawater. Many of the fish in the ocean start their lives in nurseries around these mangrove islands. If we destroy the mangroves, we destroy the fish which give us all life." And so they went out to sea and left the island in peace.

T
thems
and th
build
Heron
shrimp
A mag
up his
impres


Where two worlds meet
These mangrove forests are some of the most dynamic and productive food factories on the planet.
Each day many tonnes of mangrove leaves are shed into the water.
Microorganisms in the mud break down the leaves. These nutrient rich soups of microorganisms and rotting leaves feed fish, birds and crustaceans. These in turn feed many other species – including humans.
From mud to dinner plate
No mangroves... no fish... no fishing!
An estimated 75 percent of Australian commercially caught fish and prawns depends either upon the food produced in the mangroves or on sheltering in mangroves for part of their life cycle.
Mangroves also protect marine life by trapping sediment and filtering pollutants from runoff.

Mangrove Action Project

- MAP is dedicated to reversing the degradation of the Mangrove forest ecosystems worldwide. Its central tenet is to promote the rights of local coastal peoples including fishers and farmers, in the sustainable management of coastal environs.
- http://w1.mangrove.org:880/video/mri.htm

Reasons for loss of mangroves

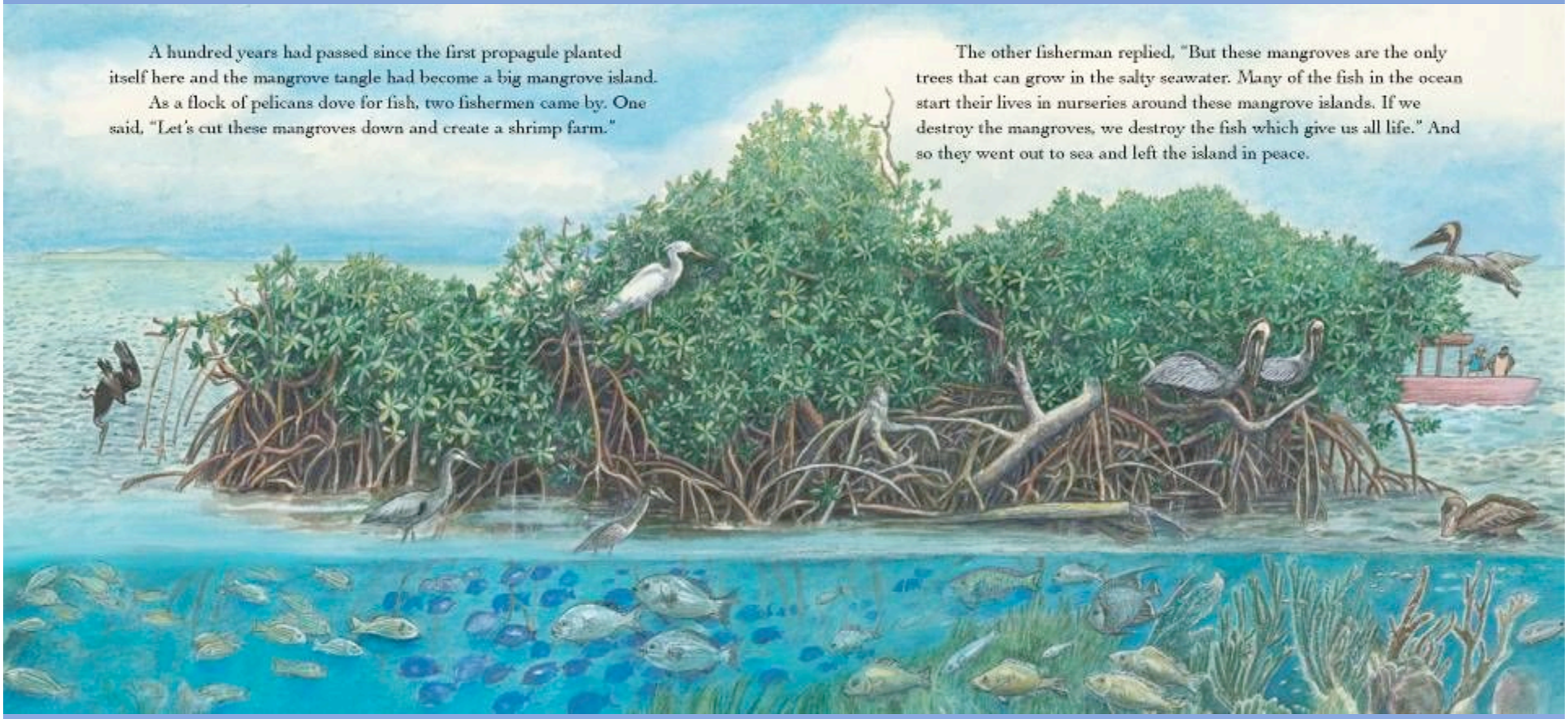
- Consumer demand for luxury shrimp or “prawns” and the corresponding destructive methods of industrial shrimp aquaculture
- The failure of national governments to adequately regulate the shrimp industry
- The headlong rush of multinationals to fund aquaculture development
- Destruction of mangroves for coastal development


How Groundhogs Garden Grew

A hundred years had passed since the first propagule planted itself here and the mangrove tangle had become a big mangrove island.

As a flock of pelicans dove for fish, two fishermen came by. One said, "Let's cut these mangroves down and create a shrimp farm."

The other fisherman replied, "But these mangroves are the only trees that can grow in the salty seawater. Many of the fish in the ocean start their lives in nurseries around these mangrove islands. If we destroy the mangroves, we destroy the fish which give us all life." And so they went out to sea and left the island in peace.




ERNEST HEMINGWAY
CHISIE FARRINGTON
BL. MARLIN 354 LBS.
BIMINI JUNE 1936
ERNEST HEMINGWAY
1933
MICHAEL LERNER
ERNEST HEMINGWA
BLUE MARLIN 542 L

Juvenile lemon sharks at East Creek, on North Bimini summer 2000 . East Creek with its fast flowing tidal current is the northeast entrance to the mangrove estuary. Young lemon sharks were once common here as in all of the Bimini lagoon. North Sound and the Bimini lagoon are a lemon shark birthing area and Dr. Samuel Gruber and his Bimini Biological Field Station a.k.a. "The Shark Lab" have been studying this animal in Bimini for almost twenty years. Under normal conditions North Sound alone can support approximately 280 young sharks. Since Mr. Capo's dredging and the resultant release of silt and previously sequestered naturally occurring toxins the Shark Lab has determined that the shark population has dropped by two thirds, the growth rate has dropped by two thirds and specimens are found to have nerve damage brought on by the poor water quality. In July 2004 repeated efforts to find juvenile lemon sharks at East Creek failed. Also, the large schools of baitfish have disappeared and biodiversity in general has declined.

SUPPORT BAHAMIAN MARINE RESERVES

AND ENSURE THAT WE HAVE FISH FOR THE FUTURE

WHAT ARE THEY?

Fully-protected marine reserves are areas of the sea completely protected from fishing and other extractive or harmful human uses. Within marine reserves, no fishing or removal of any other material is permitted. Marine reserves and their rules are permanent.

WHERE ARE THEY?

The Bahamas is establishing a network of marine reserves throughout the country. The Government has agreed to the immediate establishment of the first five marine reserves in the following areas: Abaco, Eleuthera, Berry Islands, Exuma, and Bimini.

WHAT ARE THE BENEFITS?

- Replenishment of fisheries stock
- Protection of sea creatures and their habitats
- Protection of spawning aggregations
- Opportunities for scientific research
- Protection of biodiversity and ecological integrity

Staff photo/MICHAEL MALONE

Miami developer Gerardo Capo outlines his plans for Bimini: a hotel named "Hemingway's Heaven" and a 10,000-square-foot casino.

Developer gambles on Bimini

$100M casino resort faces hurdles

By LANE KELLEY
Staff Writer

Ponce de Leon looked for the fountain of youth in Bimini. Ernest Hemingway loved to go fishing there. Gary Hart's presidential aspirations took a nosedive after he went there with a girlfriend.

Now a Miami developer wants to cash in on the sleepy island's reputation with a hotel named "Hemingway's Heaven," a bar named "Monkey Business" — and a casino that will ferry gamblers from South Florida by hydrofoil.

Besides adding one-armed bandits and blackjack dealers, the proposed $100 million project, scheduled to break ground in January, would transform the secluded fishing village into a boisterous year-round tourist destination. The workers hired by developer Gerardo Capo would increase Bimini's population by more than 50 percent from its 1,600 residents.

Plans call for extending the airport runway so commercial jets can land — the only scheduled flight to the island now is a 17-seat Pan Am seaplane. Capo also says the harbor will have to be dredged deeper for a 250-passenger hydrofoil, which essentially is a boat on skis.

■ Gambling ship operators get a break. 8D

Capo's idea is to make Bimini, only 45 miles from Fort Lauderdale, something more than just a summer haven for deep-sea anglers.

"Bimini is the backyard of South Florida," Capo said from his Miami office. "There are 750,000 registered boat owners in South Florida. That's a pretty good market."

Not everyone in Bimini likes the idea, though.

Longtime resident Stanley Pinder, one of the most vocal opponents, says the 7-mile-long Bahamian island is too small to accommodate the hordes that flood into casinos in Freeport and Nassau. And Pinder says he isn't persuaded by Capo's promise that the casino would create jobs.

Staff graphic

"It would create a lot of crime, too," Pinder says.

Michael Burgess, project director of the Bimini Bay Resort and Casino, says Pinder is the most vocal of a small minority against the project.

Opponents still have time to mount a

PLEASE SEE BIMINI / 8D

July 2005: Bulldozers from Gerardo Capo's Bimini Bay Development destroy the mangrove forest of Mosquito Pointe. In spite of numerous protests to the Bahamian Government from environmentalists, scientists and citizens from around the world, and assurances to the contrary from Bahamian officials, the destruction goes on. Not accidentally the native Biminites are largely unaware of what transpires on the construction site and are ignorant of the total plan. Repeatedly they are told falsehoods both by Mr. Capo's people and by their government representatives. In general Biminites are fiercely and blindly loyal to their political parties, the PLP and the FNM, both of which have officials suspiciously supportive of Mr. Capo. Biminites are naïve about the ways of big business and corruption and so reject with anger the idea that their government officials are lying to them, even when the evidence is in front of them. Without external pressure these cultural quirks will allow Mr. Capo to destroy Bimini and a way of life.

July 2005: Mosquito Pointe has been ravaged by Mr. Capo's bulldozers. The mangrove forest wetands and fish nursery are now gone forever and no one will ever fish there again. The words of Prime Minister Perry Christie and other government officials extolling the virtues of their environmental policy are revealed to be meaningless. Mr. Capo will now further dredge the Bimini Lagoon to gain fill to create land here. Notice the silty water from dredging operations out of site to the left coursing around the end of Mosquito Pointe into North Sound . Once again Mr. Capo's promise to use silt containment booms was a lie as is most everything else he says. While this scene is disheartening there is still much of the ecosystem still intact. Pressure must continue to be applied in order to save the rest of North Bimini.

August 2005: All that remains of the mangrove forest within Mosquito Pointe. For weeks clouds of smoke have drifted from the construction site as workers burn the remains of the dead trees. Next, fill will be dredged from the Bimini Lagoon and dumped on the wetlands. While much of the civilized world strives to save mangroves from destruction the Bahamas, just 50 miles from Miami, behaves as a primitive third world country, its officials grabbing at quick money while they betray the trust of the people.


Area shown in Photos

In July 2004 14 year old Jana Rajnohova from Banska Bystrica, Slovakia spent 8 days exploring Bimini and it's mangroves. She was delighted with the intricate biodiversity and horrified to see what plans Mr. Capo had for them. Upon returning to Slovakia Jana made the fight to save Bimini her own. First she wrote directly to Bahamas Prime Minister Perry Christie. She made photo presentations at local schools and environmental gatherings. She gathered over three hundred signatures from children and adults on a petition to be presented to the Prime Minister asking him to disallow

Phases II & III of the Bimini Bay development (lower right, in black T-shirt with logo). The petition also asks the PM to implement the Bimini MPA. Jana's passion continues and a letter she wrote was recently published in the Freeport News on Grand Bahama Island. Now 15 she writes articles about the problem for local magazines and dreams of the day she can return to Bimini as a college student to do research work at the Shark Lab. Jana prays that when that time comes there will still be a pristine estuary to study and a Shark Lab to work from. She is a symbol of the new generation that wants to preserve the natural world instead of destroying it.

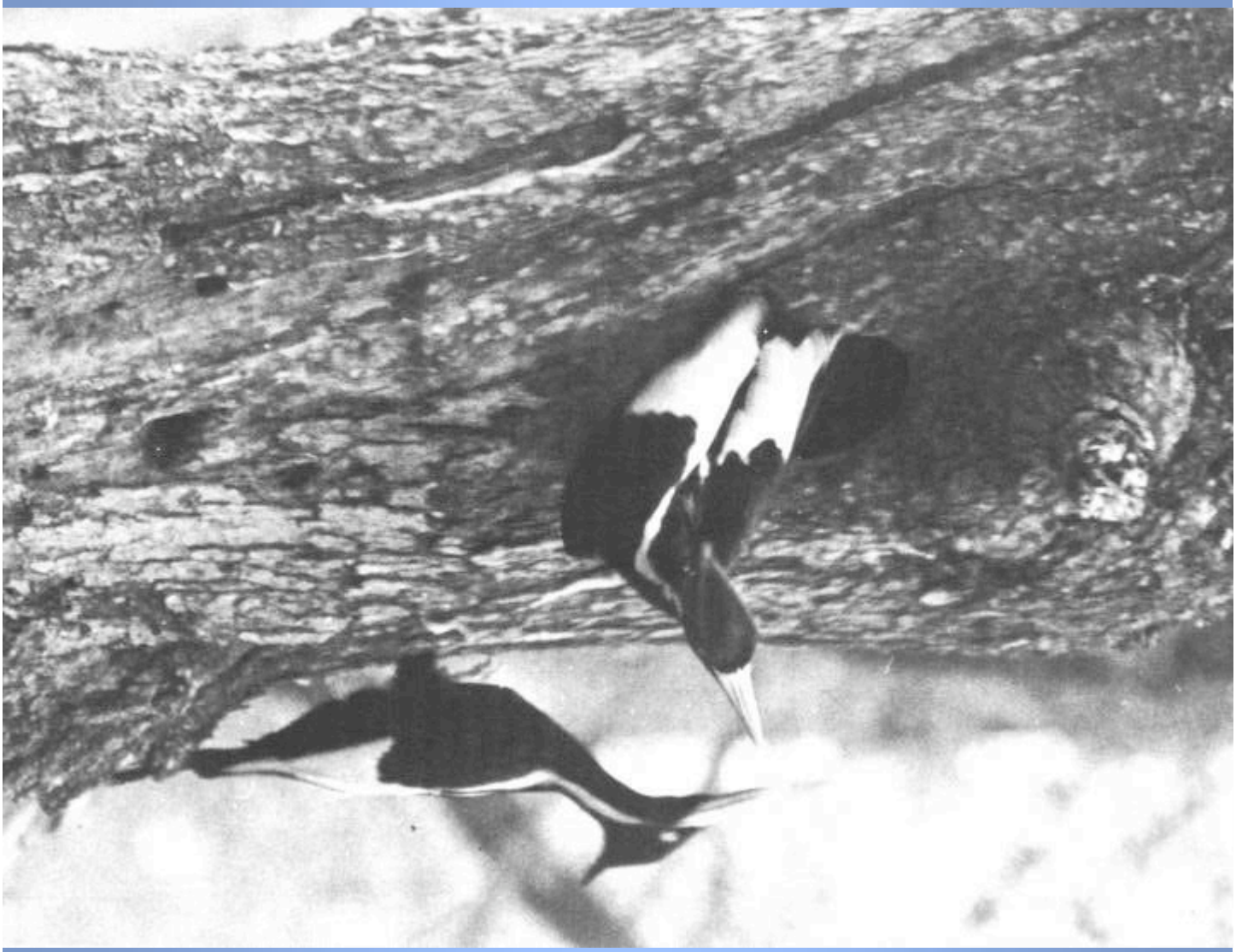

AEROPOSTALE
EST. 1987

Making a Difference in the World

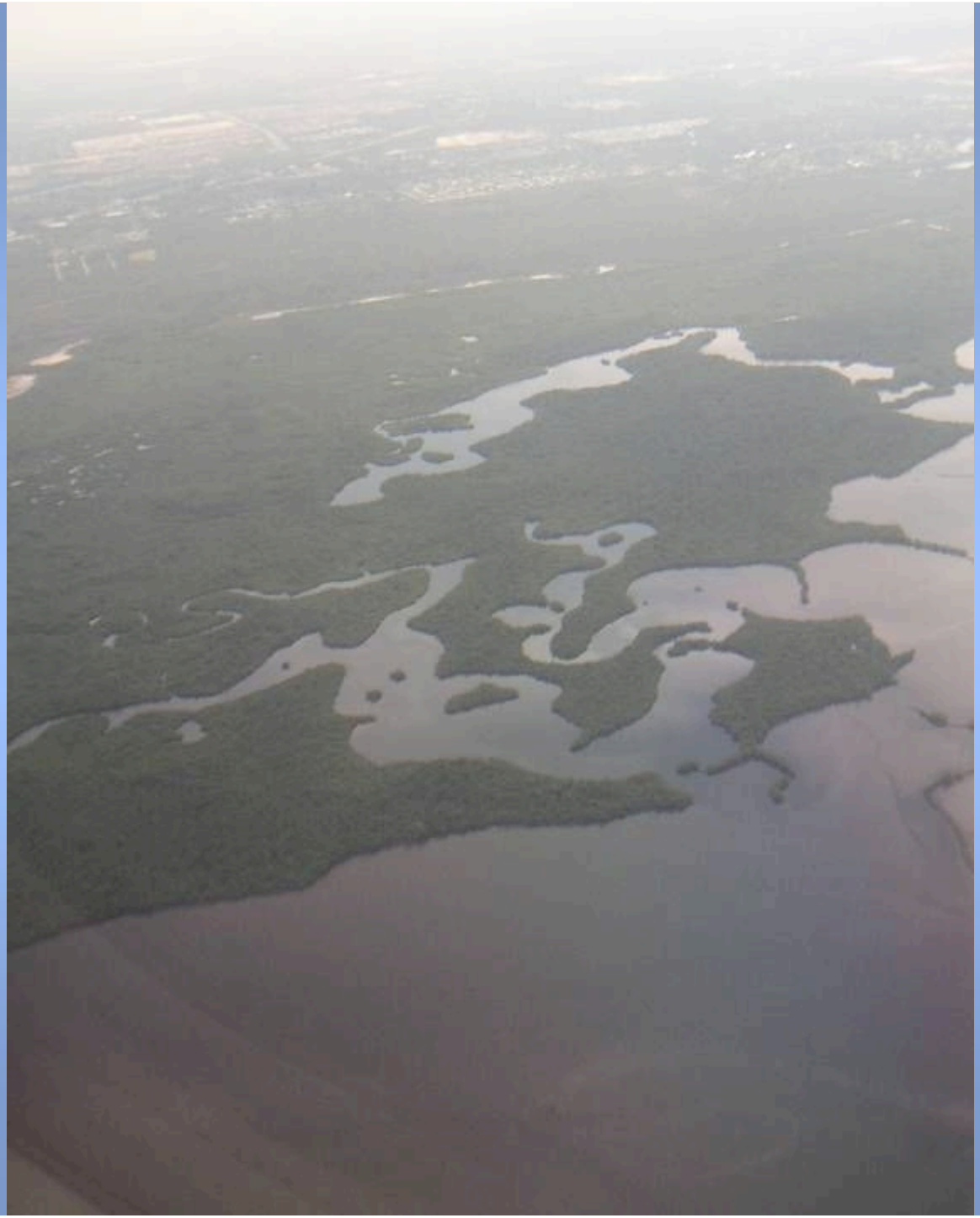
by Lynne Cherry

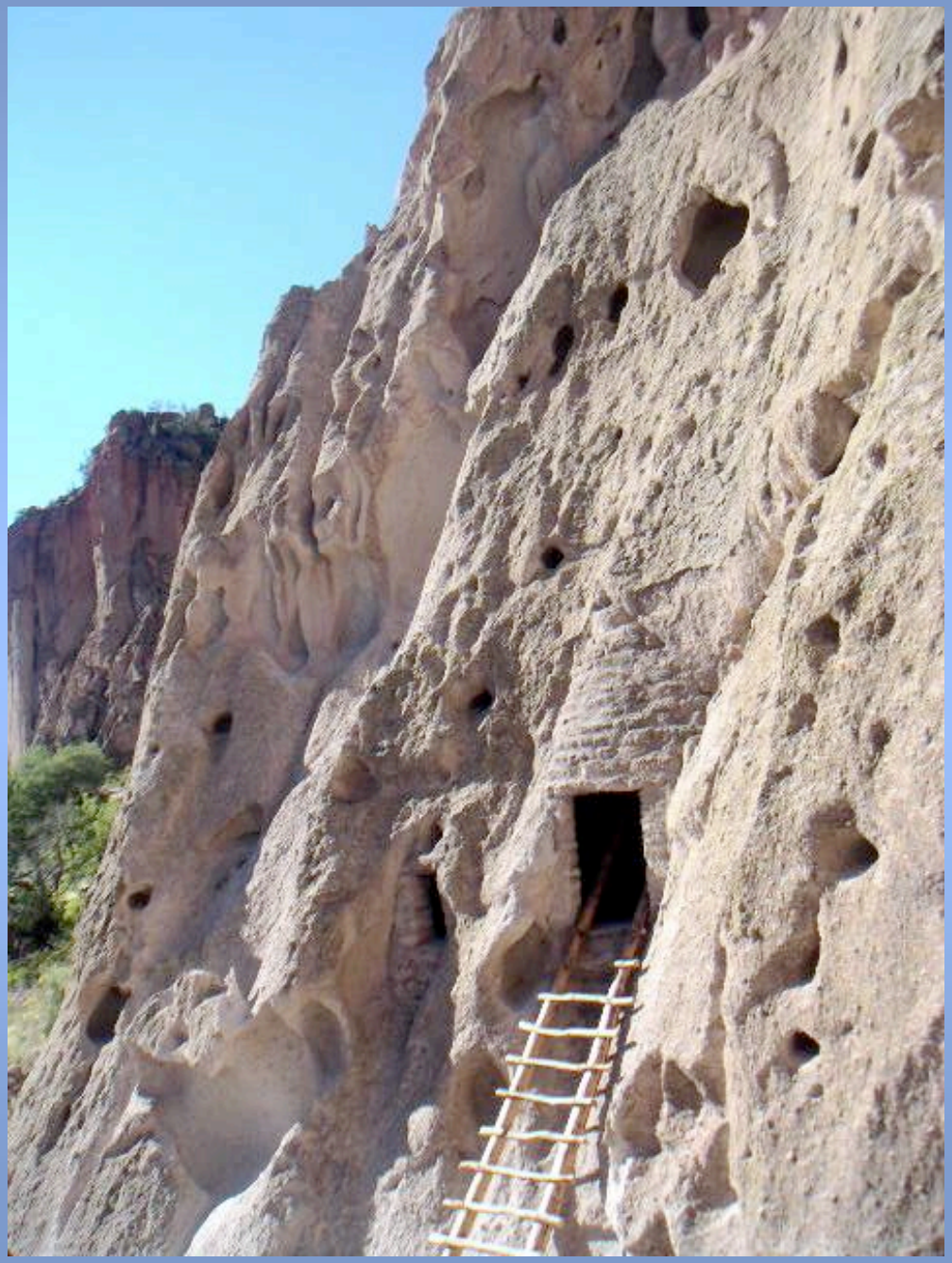
How Rich Will We Be
When We Have Converted All Our Forests, All Our Soil, All Our Water Resources and Minerals into Cash?

This question "How Rich Will We Be . . ." seemed heretical when Ding asked it in 1938. Today we recognize the wisdom of the question and the answer brings a shudder.

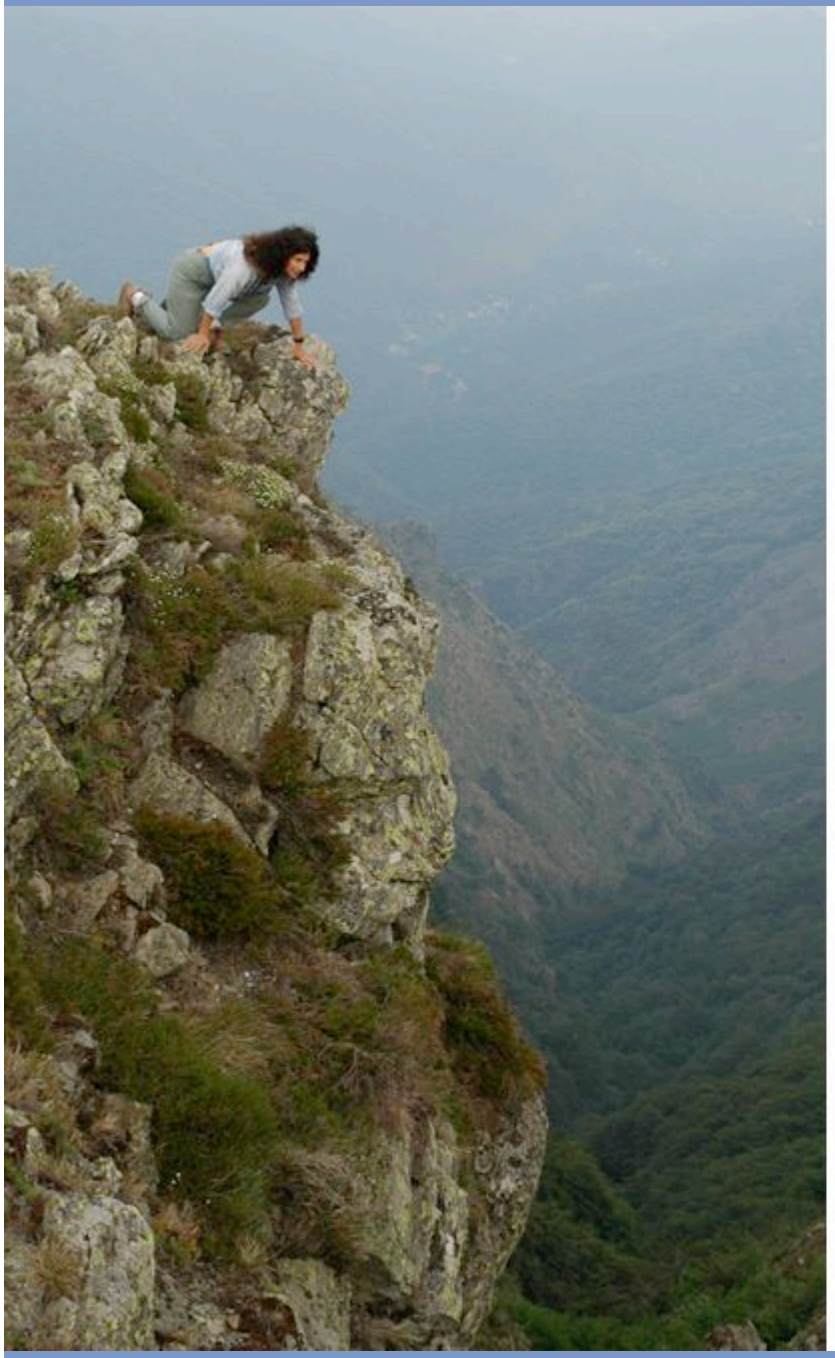


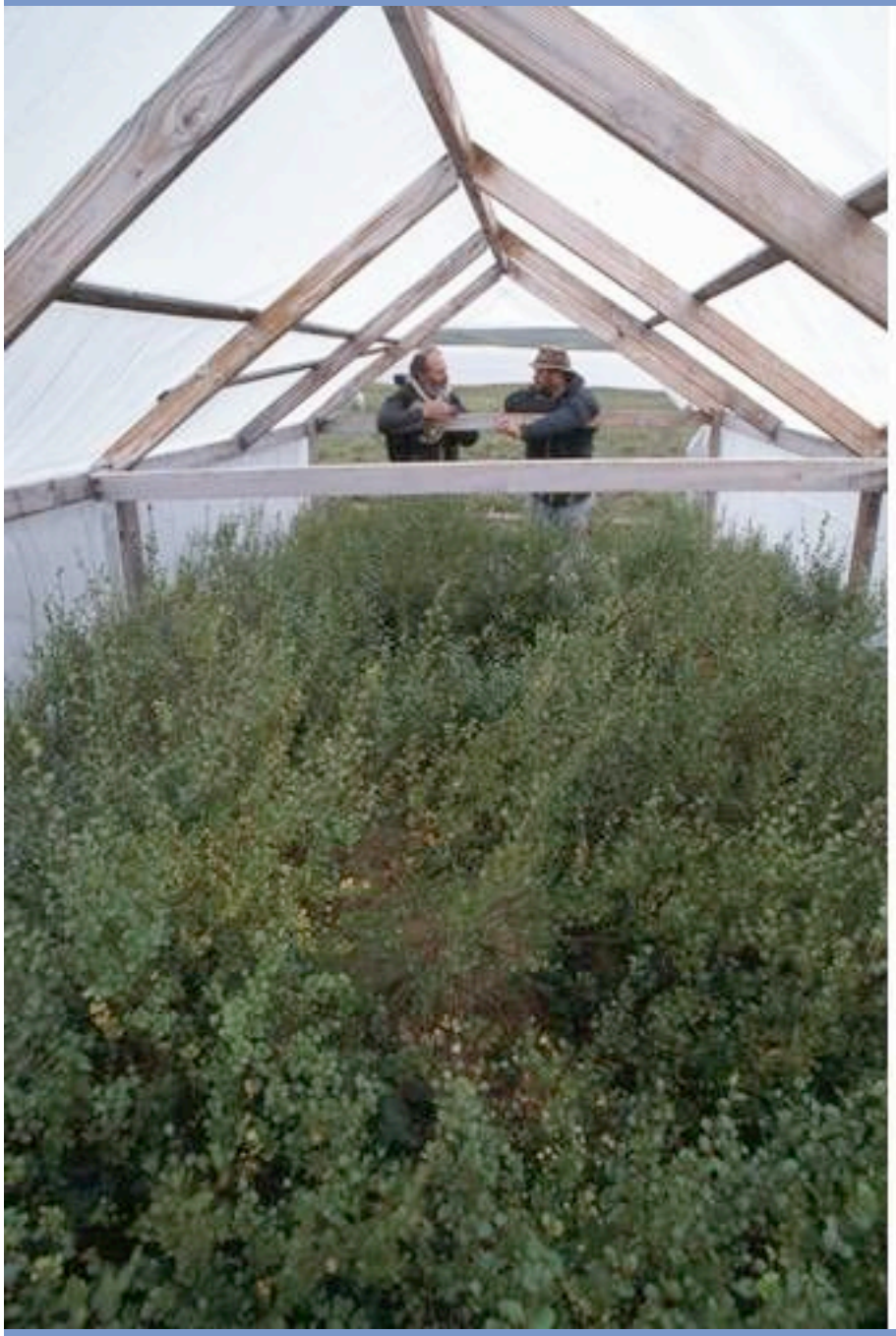
Since the ivory-bill's last confirmed sighting in the United States at the Singer Tract in 1944, there have been many unconfirmed reports of the bird. Data taken from "In Search of the Ivory-billed Woodpecker" by Jerome A. Jackson and USFWS files






How SCIENTISTS KNOW
Our CLIMATE is CHANGING





Trajectory Shifts in the Arctic and Subarctic Freshwater Cycle

Bruce J. Peterson,[1]* James McClelland,[2] Ruth Curry,[3] Robert M. Holmes,[4] John E. Walsh,[5] Knut Aagaard[6]

Manifold changes in the freshwater cycle of high-latitude lands and oceans have been reported in the past few years. A synthesis of these changes in freshwater sources and in ocean freshwater storage illustrates the complementary and synoptic temporal pattern and magnitude of these changes over the past 50 years. Increasing river discharge anomalies and excess net precipitation on the ocean contributed ~20,000 cubic kilometers of fresh water to the Arctic and high-latitude North Atlantic oceans from lows in the 1960s to highs in the 1990s. Sea ice attrition provided another ~15,000 cubic kilometers, and glacial melt added ~2000 cubic kilometers. The sum of anomalous inputs from these freshwater sources matched the amount and rate at which fresh water accumulated in the North Atlantic during much of the period from 1965 through 1995. The changes in freshwater inputs and ocean storage occurred in conjunction with the amplifying North Atlantic Oscillation and rising air temperatures. Fresh water may now be accumulating in the Arctic Ocean and will likely be exported southward if and when the North Atlantic Oscillation enters into a new high phase.

The hydrologic system, including precipitation minus evaporation (P-E), terrestrial ice, sea ice, and ocean circulation, is a major component of ongoing changes in land and ocean ecosystems of the Arctic (*1*). Precipitation at high latitudes is increasing (*2*, *3*), river discharge is rising (*4*), glaciers (*5*) and the Greenland Ice Sheet (*6*) are shrinking, and the sea ice cover of the Arctic Ocean is decreasing in both thickness and extent (*7*). In recent decades, the Nordic Seas and Subpolar Basins experienced a remarkable freshening (*8*–*10*). Half of the total freshening occurred rapidly during the early 1970s, a period called the Great Salinity Anomaly (GSA) (*11*), but the freshening continued at a lesser rate until the late 1990s (*10*). These manifold changes in the freshwater (FW) system were largely synchronous and correlated with the amplifying North Atlantic Oscillation (NAO) index and rising air temperatures that characterized the period 1950–2000 (*2*–*4*, *12*). Here, we synthesize these observations in order to mechanistically link the Arctic FW system to the North Atlantic, including its subtropical basins.

To focus our synthesis, we pose a simple question: Can the increases in FW inputs from both atmospheric moisture convergence and from melting Arctic ice account for the recently documented freshening of the North Atlantic? Our approach is to calculate annual and cumulative FW input anomalies from net precipitation (P-E) on the ocean surface, river discharge (P-E on land), net attrition of glaciers, and Arctic Ocean sea ice melt and export for the latter half of the 20th century and compare these fluxes to measured rates of FW accumulation in the Atlantic's Nordic-Subpolar-Subtropical basins (hereafter NSSB) during the same period. These are estimates and budgets of FW anomalies (changes in fluxes and stocks relative to defined baselines during the years 1936–1955) and not budgets of total FW fluxes and stocks (*13*). A recent review of the Arctic Ocean FW budget (*14*) complements this review of changes in the FW cycle.

The domain for this synthesis (Fig. 1) includes the Arctic Ocean and its watershed, the Canadian Archipelago, Baffin Bay, Hudson Bay and its watershed, the Nordic Seas, Subpolar Basins, and the deep (>1500 m) subtropical basins of the North Atlantic. Anomalies of FW inputs were estimated by using the sources in Table 1 and compared to estimates of FW storage that were previously reported for the Nordic and Subpolar Seas (*10*) but here expanded to incorporate the deep Subtropical Basins (*13*). The present analysis of river discharge supplements previous reports of sustained Eurasian river runoff increases since the late 1960s (*4*, *15*) by incorporating the entire Arctic Ocean watershed and updating the records through 2003. Bering Strait plays a substantial role in the Arctic FW budget but is excluded here because long-term (1955–2000) changes in FW transport are unknown (*16*, *17*). A lack of adequate salinity data precludes assessing changes in the total FW content of the Arctic Ocean, although some information is available on changes in upper ocean

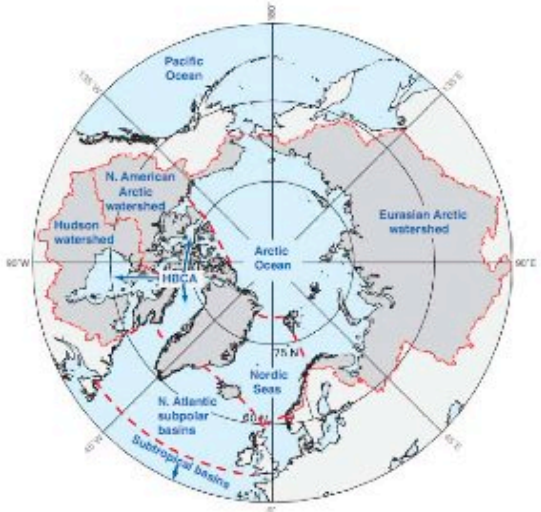


Fig. 1. Polar projection map showing the watershed and ocean domains used for estimates of freshwater anomalies. Solid red lines delineate watershed boundaries used for calculations of river discharge anomalies. Dashed lines separate regions of the ocean surface used for calculations of P-E anomalies and define the boundaries used for freshwater storage analysis in the Nordic Seas and the North Atlantic Subpolar Basins (*10*).

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Portage Glacier AK, 1914 • NOAA


Portage Glacier AK
© 2004 Gary Braasch
(aerial estimation of 1914)

Poster of Glacier recession around the world, re-photography by Gary Braasch © 2005











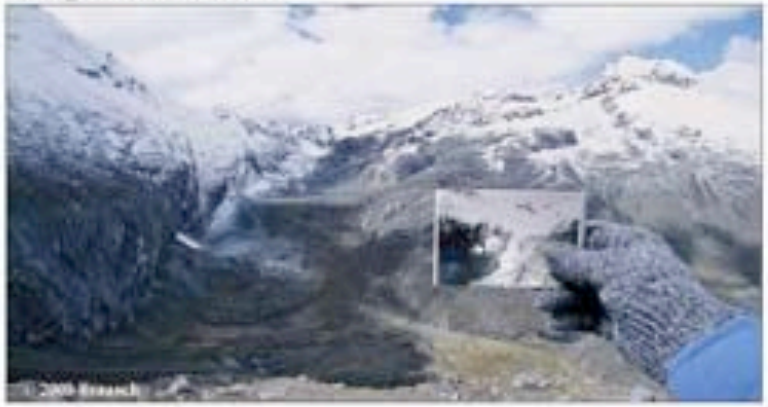


Photographers' Perspectives on Global Warming

JW Gallery October 14 - November 6th
Contemporary Glacier Photographs by Gary Braasch ©
www.globalwarmingphotographs.com

THE END